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ENERGY

No. 93

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CONTENTS

ENERGY CONSERVATION

Kazakh People's Controllers Aid Mangyshlak Energy Conservation
(Editorial Report) 1

FUELS

USSR Coal Minister Criticizes Lagging Mines
(Yu. Razgulyayev, PRAVDA, 15 Dec 81) 2

Kuznets Basin 1981 Performance, 1982 Perspectives
(M. Gnusin; SOTSIALISTICHESKAYA INDUSTRIYA, 27 Jan 82) 6

Coal Mine Preparatory Workers List 1982 Obligations
(PRAVDA VOSTOKA, 15 Jan 82) 8

Oilfields Stimulate Backwoods Prosperity
(Saqtaghan Bayishev; SOTSIALISTIK QAZAQSTAN, 1 Oct 81) . 10

Coal Mining Equipment Suppliers Punished
(PRAVDA UKRAINY, 29 Dec 81) 15

Advance in Domestic Mining Equipment
(M. Sergeychik, KAZAKHSTANSKAYA PRAVDA, 10 Jan 82) 17

Donets Basin Coal Mining Equipment Poorly Made, Maintained
(PRAVDA UKRAINY, 21 Jan 82) 19

Donets Coal Mines Must Stop Wasting Timber
(I. Gerasimov, et al.; TRUD, 13 Jan 82) 26

Kamchatka Coal Exploration To Increase
(PRAVDA, 11 Jan 82) 28

Status of Urengoy Gas Field Development Described
(M. Umanskiy; SOTSIALISTICHESKAYA INDUSTRIYA, 27 Jan 82) 29

Gas Industry Continues Growth in Taymyr
(A. Dzyura; PRAVDA, 25 Jan 82) 32

Gas Lift Method Produces Results in Tyumen'
(SOTSIALISTICHESKAYA INDUSTRIYA, 28 Jan 82) 34

Briefs

New Donets Mine 36
Leading Donets Coal Workers 36
Donetskugol' Association 1982 Goals 36
Vorgashorskaya Mine Results 37
Dolzhanskaya-Kapital'naya Mine Opened 37
Outstanding Collective Reaches Goal 37
Donetskugol' Meets 1981 Goals 38
Coal Sector's 1982 Goals 39
Kuznets Timbering Recycled 39
Karaganda Basin's Goals 39
New Kuznets Deposit Opened 40
Streamlining Rail Shipment 40
New Extraction Technique 40
Donets Mine Meets Goal 40

GENERAL

Improving Economy of Mangyshlak Complex Discussed
(S. Mukashev; APN DAILY REVIEW, 18 Feb 82) 42

ENERGY CONSERVATION

KAZAKH PEOPLE'S CONTROLLERS AID MANGYSHLAK ENERGY CONSERVATION

[Editorial Report] Alma-Ata SOTSIALISTIK QAZAQSTAN in Kazakh 25 September 1981 carries on page 3 a 1,200-word article by A. Atshybaev, chairman of the People's Control Committee for Mangyshlakskaya Oblast, on the work of people's control organs in his oblast. He notes that people's control organs are, under party leadership, helping resolve economic problems by devoting attention to strengthening the state system, increasing the economic profitability of social production and discovering and putting into use production resources. (He recalls in this regard that there are now 878 control groups and 82 watches with more than 10,000 activists, 70 percent of them party or Komsomol members, now active in Mangyshlakskaya Oblast.) The remainder of the article focuses on the intervention of these groups to conserve energy in many areas of the oblast's economy.

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USSR COAL MINISTER CRITICIZES LAGGING MINES

Moscow PRAVDA in Russian 15 Dec 81 p 2

[Article by Yu. Razgulyayev, Karaganda, with comment by USSR minister of the coal industry B. F. Bratchenko: "Innovators Are Showing the Way — How We Fulfill Our Obligations"]

> [Text] The Mine imeni 50-Letiya Oktyabr'skoy Revolyutsii of the Karagandaugol' [Karaganda Coal] Production Association has worked consistently for a long time. After successfully completing the 10th Five-Year Plan, again this year the miners shipped tens of thousands of tons of coal beyond the plan to customers. It was at this very mine that the collective of Section No 10, which is headed by V. Belyayevskiy and was the first in the basin to fulfill its socialist obligations, extracted 500,000 tons of coal from one working face. The next after them to conquer the half-million barrier was the Komsomol-youth section headed by A. Nikolayev.
>
> The mine workers of Karaganda are among the leaders in competition in the sector.

[Report by Yu. Razgulyayev]

"We have introduced clearcut organization of labor and rigorous engineering calculations," mine director V. Lazarev reported.

This means a great deal. Take the problem of transportation, for example. The plan for the mine envisioned hauling in electric carts. But the efficiency of the tracks was low. Batteries would run down, the engineer would become sick, or the engine would break down — and the rhythm of the extraction brigades would be disrupted. A decision was made to set up conveyor transportation in V. Belyayevskiy's section. This required additional excavation and a considerable amount of installation work. But now the section does not lose a minute because of transportation problems.

Before the section was transferred to a new working face the composition of all the extraction brigades was reviewed. Experienced miners and communists were put in charge of them.

At some mines they believe that emergency shutdowns are inevitable. But in August in V. Belyayevskiy's section, for example, not a single unit was ever stopped because of breakdowns.

"There are no special secrets here," explained electrician V. Shapovalov. "The whole thing is to increase accountability. Repair now is not impersonal. If the belt conveyor stops, for example, a specific person is responsible. If necessary, of course, any one of us will help out a comrade. But if an accident occurs, you answer for it personally!"

Let me emphasize that the mine geological conditions here are much worse than at other mines. But careful preparation of the faces and precisely organized installation and removal of the mining complexes help the collective keep losses at a minimum.

"We understand," says secretary of the party committee G. Onopriyenko, "that we have by no means put all reserves to use. There is still a large gap between the collectives that extract 500,000 tons and the rest. Violations of labor and industrial discipline have not been completely eliminated. There are also 'external' factors. In one case our best brigades were idle for 10 days because the repair plants for power and mining equipment did not restore the combine for the new face in time."

The largest mine in the Karaganda coal basin works in difficult conditions. But a concern for future prospects and a high sense of responsibility help the mine workers overcome difficulties and fulfill their stepped-up assignments successfully.

[Comment by USSR Minister of the Coal Industry B. F. Bratchenko on the above report]

The Karaganda Mine imeni 50-Letiya Oktyabr'skoy Revolyutsii is one of the best, not only in the basin but also in the sector. The leading sections there have reached a level of monthly labor productivity per worker that is four times the average in the sector.

Their success was predetermined by vigorous implementation of the know-how of the brigades that extract at least 1,000 tons of coal a day from each fully mechanized face. All the faces at the enterprise work with this high load.

Sector-wide there are more than 400 brigades and sections that have switched to the "thousand ton a day" system, and they produce almost half of the coal mined by underground methods. Their know-how helps overcome worsening mine geological conditions and achieve high return on labor.

We have introduced annual planning for the implementation of progressive practices. The plans are reviewed and ratified by the ministry board of directors and the presidium of the Central Committee of the sectorial trade union. One of the most effective ways to disseminate the achievements of the innovators is to conduct schools of progressive know-how on the level of a few mines, the republics, and the all-Union level. Thus, more than 70 brigades and sections following the example of the Raspadskaya Mine in the Kuznets basin have already achieved this outstanding result: extracting 1,000 or more tons of coal per month per worker.

At one of the most recent meetings of the board of directors the question of improving the evaluation of results of labor by competing collectives was discussed. Interesting proposals were made by Hero of Socialist Labor A. Akimov, a brigade leader of Velikomostovskaya Mine No 8 of the Ukrzapadugol' [Western Ukrainian Coal] Association of L'vovskaya Oblast.

Will such steps have an impact? Is the potential of progressive know-how being fully used? I think that significant results have been achieved. The number of lagging brigades and sections in the sector is decreasing and more and more miners are reaching the levels of the leaders. Mastering the procedures and techniques of the best workers helps make up for the labor shortage. Finally, progressive know-how promotes better use of the equipment, which is also quite important.

But we do still have a large number of underground and open-cut mines that are behind. Unsatisfactory use of capacities at numerous rebuilt sites is especially alarming. For various reasons more than 40 percent of them produce less fuel than envisioned by plans. The Pervomayskugol' [Pervomaysk Coal], Shakhterskantratskit [Shakhtersk Anthracite], Severokuzbassugol' [Northern Kuznets Basin Coal], and Chelyabinskugol' [Chelyanbinsk Coal] associations are doing especially poorly with incorporating capacities.

Steps to overcome this lag must include training those workers in progressive labor techniques and better methods of organizing production. Where administrations of the ministry and local party and trade union bodies proceed in this way, the situation improves. The Novodonetskaya Mine of the Dobropol'yeugol' [Dobropol'ye Coal] Association can serve as an example. It did not meet its plan for a long time. Earnings fell and worker transience was rising. With the managers of the association and the leaders of the Dobropol'ye city committee of the party, the ministry reviewed the reasons for the enterprise's unsatisfactory work and then, employing the experience of the best collectives, modified the system of preparing the work front. At the same time the mine management was bolstered and help was given with staffing the mining brigades. Things did straighten out.

In another case the Krasnyy Partizan Mine, which had once been a leader, went into a decline. They were 300,000 tons behind for the year. The famous brigade of Hero of Socialist Leader V. Merzenko, which had assumed the obligation of extracting another million tons of coal this year but was still far from this high objective, found itself in a difficult situation. The person at fault was mine director N. Dmitriyenko, who had permitted a whole series of engineering miscalculations. The managers of the Sverdlovantratsit [Sverdlovsk Anthracite] Association did not give the enterprise the necessary help either.

I want to emphasize that only with close contact between economic managers and the party, trade union, and Komsomol organizations and purposeful work to intensify people's creative initiative are conditions created for fulfillment of plans and socialist obligations. The Kemerovskaya Oblast party committee, for example, is very helpful in improving the work of coal mining enterprises. It was through their direct assistance that the mines that had once been behind such as the Mine imeni Lenin, Kapital'naya, Shushtalepskaya, Krasnyy Uglekop, Zenkovskaya, Karagalinskaya, and others became leaders. The Karagandinskaya Oblast party committee helped the Karagandaugol' [Karaganda Coal] Association overcome a serious problem.

About 3,000 collectives of brigades, shops, sections, and entire enterprises of the sector have already fulfilled their annual plans and socialist obligations. The decrees of the CPSU Central Committee and USSR Council of Ministers on raising the wages of coal industry workers, technical re-equipping of the underground mines, and stepping up extraction by open-cut mining were an important mobilizing force directed at a fundamental improvement of affairs in the sector. Responding to party and government concern, the working people of the sector are trying to labor better and do everything necessary to overcome the lag as quickly as possible and provide the national economy with more solid fuel.

11,176
CSO: 1822/86

FUELS

KUZNETS BASIN 1981 PERFORMANCE, 1982 PERSPECTIVES

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 27 Jan 82 p 2

[Article by M. Gnusin, chief engineer of the Mine imeni 7 Noyabrya of the Leninskugol' Association, Leninsk-Kuznetskiy: "Miners Striving"]

[Text] In January of last year our collective adopted very high obligations, which were published in SOTSIALISTICHESKAYA INDUSTRIYA. Analyzing the competition to fulfill these obligations today, we will attempt first of all to take account of our omissions.

Although last year as a whole can be considered satisfactory for our collective, we did not fully meet the primary indicator of our obligations. We intended to extract 100,000 tons of coal beyond the plan, but achieved only 90,000 tons. The program for further development of the mine and for construction of residential and social-cultural facilities was basically carried out as planned. We saved 418,000 rubles by economical use of materials and lowering the prime cost of the coal extracted. We spent 4,478 tons of standard fuel less than planned for our own needs.

But there are also points in the socialist obligations which, unfortunately, we did not fulfill at all. This refers above all to reconstruction of the mine. Mining work proper is entirely on schedule. But the situation is much worse with construction work. Our contractors are letting us down. Everywhere you look there are temporary units. There is a fan in every internal shaft and a hoist on every horizon. But we must have one powerful fan and a central substation. This would permit a significant reduction in service personnel and enable us to save considerable capital and better organize the work of both preparatory and face-cutting sections.

We intended to raise all six face-cutting brigades to an output level of 1,000 tons a day. But it did not turn out. The mechanized complex which we were supposed to receive arrived at the mine late. For two months the mine did not fulfill its plan. The working face was prepared, but we had to wait for the complex.

We are assessing our capabilities this year with optimism. There is reason to do so. We have been given a plan of extracting 2,620,000 tons. We already have 2,540,000 tons of reserves prepared for excavation. If we add to this the 200,000 tons of coal which will be received during shaft-cutting and preparatory excavation, we have a work front for the entire year.

It has become a rule among us to keep ahead in preparation of reserves. We have followed it even in the most unfavorable circumstances. So we now have accessible coal reserves for three five-year plans.

We observe the same principle in face preparation. At the present time, for example, the first section is finishing up its current working face. In the new face 60 sections of hydraulic timbering have already been installed. Just 30 more sections must be installed and the face will be ready to go into operation. The second section will not finish its current working face for three months, but its new face is already prepared.

With such future preparations one would expect us to work rhythmically. But because of lagging reconstruction it is difficult to send up an increasing flow of coal. We are taking steps to increase the carrying capacity of the conveyor lines using our own personnel.

I must say that all the plans and designs would have been nothing more than pieces of paper if it had not been for our remarkable people. The brigade of N. Yemel'yanov enjoys well-deserved respect in the collective. It extracted 500,000 tons of coal last year, which is a very good figure. N. Meshkov's brigade has planned this same figure for the present year. We can be sure that this brigade will keep its word. The miners in the collective work well together and have quite high qualifications.

A special word should be said about brigade leader A. Popov, who is well known in the Kuznets basin. He was the leader of an outstanding collective. Then at the request of the mine management he took charge of a brigade which had not fulfilled its plan for 18 months. The section chief assigned him engineer I. Levshenko, a young but already adequately experienced man, and most importantly an innovative man who works hard to achieve the goal. Things did straighten out, and now the brigade is working smoothly.

We have adopted our socialist obligations for the current year. The mine is confidently standing on labor watch in honor of the 60th anniversary of the formation of the USSR. The plan calls for an increase of 60,000 tons, and we have decided to extract an additional 50,000 tons of coal. We are now waiting for a visit from representatives of the collective of the Kommunist Mine of the Khartsyzsk Oktyabr'ugol' Production Association, our rivals in competition. We will sign an agreement for competition in 1982. We are fully confident that we will meet our obligations.

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COAL MINE PREPARATORY WORKERS LIST 1982 OBLIGATIONS

Tashkent PRAVDA VOSTOKA in Russian 15 Jan 82 p 1

[Article: "Appeal by Brigade Leaders of Shaft-Cutting Brigades Who Were Delegates to the 13th Congress of the Trade Union of Coal Industry Workers to All Shaft-Cutting Workers and Managers of Shaft-Cutting Sections in the Sector To Celebrate the 60th Anniversary of the Formation of the USSR in Worthy Fashion"]

[Text] Like all coal miners in the country, we, the representatives of leading collectives of shaft-cutting brigades, accept the paternal concern of the party and government for the life of the miner with deep gratitude. We understand very well that timely development of mining work plays a large part in successful fulfillment of plans for fuel extraction. This gives us, shaft-cutting workers, a special responsibility.

The leaders of socialist competition among shaft-cutting workers are the collectives of 550 high-speed brigades which, employing progressive labor methods and using mining equipment efficiently, did some 120 kilometers of mine excavation beyond the plan in 1981. Fifty brigades achieved an average monthly shaft-cutting rate of 350-500 meters, and 24 of them did 5,000 or more meters of mine excavation in a year. The best results were seen in the brigades headed by L. P. Makhnev in the Donets basin, A. Ya. Khmelev, A. P. Shcherbakov, and P. A. Shelud'ko in the Kuznets basin, I. I. Faber in Karaganda, and K. E. Laydvee and G. I. Fedorov in the shale industry.

At the same time we understand very well that the unsatisfactory work of the coal industry in recent years has been caused to a considerable degree by untimely preparation of working faces because certain brigades did not fulfill their assignments for mine excavation work.

Guided by the historic decisions of the 26th Congress of the CPSU, the November 1981 Plenum of the CPSU Central Committee, and the speech at it by General Secretary of the CPSU Central Committee, Chairman of the Presidium of the USSR Supereme Soviet, Comrade L. I. Brezhnev and supporting the patriotic initiative of the leading extraction sections and brigades of the coal industry to celebrate the 60th anniversary of the formation of the USSR in worthy fashion, our collectives have adopted the following socialist obligations for 1982:

a. for the brigades headed by I. P. Kushnarev (Removskaya Mine) and V. P. Sokolov (Mine imeni Chelyuskintsev) in the Donets basin, A. P. Denisov (Ziminka Mine) and P. A. Shelud'ko (Koksovaya Mine) in the Kuznets basin, and M. P. Kurnikov (Severnaya Mine) in Karaganda — complete 3,500 meters and more of mine excavation during the year;

b. for the brigades headed by N. A. Vovchenko (shaft-cutting administration No 3) and A. D. Dergachev (mine construction administration No 2) in the Donets basin and R. N. Batalov and S. D. Nagornov (Novokuznetsk shaft-cutting administration) in the Kuznets basin — complete 500,000 rubles and more of construction-installation work during the year;

c. for the brigades headed by M. I. Avdiyenko (Gukovskaya Mine), V. F. Kamenev (Mine imeni Gagarin), and N. Ye. Stepin (Krasnolimanskaya Mine) in the Donets basin, P. K. Donskikh (Zyryanovskaya Mine) and M. A. Kuranov (Sudzhenskaya Mine) in the Kuznets basin, Yu. A. Laptev (Komsomol'skaya Mine) in the Urals, and N. A. Naydenov (Tsentral'naya Mine) in the Pechora basin — insure high-speed excavation work under complex mine geological conditions and exceed established quotas by 15-20 percent.

We obligate ourselves to prepare cutting faces on time and well, to insure high labor productivity, rational use of mining equipment and working time, and economical expenditure of materials and energy, and to give lagging collectives effective help based on the tutoring system and agreements among allied workers.

We call on all shaft-cutting workers, mine foremen, and engineering-technical personnel of preparatory sections at operating mines and mines under construction to become actively involved in socialist competition to increase the pace of mine excavations, prepare cutting faces and new horizons for work on time, strive for a rate of 200-500 meters a month in every mechanized shaft-cutting face, and incorporate 500,000 rubles and more a year for each mine construction brigade.

We call on the machine builders to supply us with modern highly productive shaft-cutting and transportation equipment for various mine geological conditions, to produce an adequate number of spare parts, and to raise the quality and reliability of the equipment.

We appeal to all shaft-cutting workers of the sector to celebrate the 27th Congress of the trade union and the 60th anniversary of the formation of the USSR in worthy fashion and to mark 1982 and the 11th Five-Year Plan as a whole by lofty labor achievements.

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CSO: 1822/86

OILFIELDS STIMULATE BACKWOODS PROSPERITY

Alma-Ata SOTSIALISTIK QAZAQSTAN in Kazakh 1 Oct 81 p 3

[Article by Saqtaghan Bayishev, academician of the KaSSR Academy of Sciences: "A Region of Immense Riches: 1. Mangqystau, A Happy Land"]

> [Text] In its historical resolutions the 26th CPSU Congress specified in detail, a program to further develop the economies and cultures of all union republics--the economy and culture of the KaSSR included--during the 11th Five-Year Plan. It called for intensification of geological exploration of oil and gas deposits in western Kazakhstan, acceleration of oil deposits exploitation on the Bozashy Peninsula and start-up of new capacities in Aktyubinskaya Oblast to produce phosphorite, yellow phosphorus and mineral fertilizers.
>
> Major measures of economic and social significance are being undertaken to fulfill these impressive party assignments. The KaSSR Academy of Sciences, the KaSSR State Planning Committee and the KaSSR Council for Research and Technical Societies recently held a research-practical conference on these problems in Shevchenko City, capital of Mangyshlakskaya Oblast.
>
> We offer below to our readers a series of articles by Saqtaghan Bayishev, an academician of the KaSSR Academy of Sciences who presented a research report to the conference on key problems in the development of western Kazakhstan production forces and who, after the conference, carried out a thorough on-the-spot investigation of the area, reporting on his impressions and thoughts concerning his trip.

In his report from the CC CPSU to the 26th Party Congress, Comrade L.I. Brezhnev pointed out that from the first years of the Soviet regime our economic and social policy has been founded on raising, as rapidly as possible, the former nationality regions of Russia to the developmental levels of metropolitan Russia, that this task has been accomplished, that the solidarity of all Soviet nationalities and, above all, the untiring aid of the Russian people have played a major role in accomplishing this and that there are no longer any backward national regions. He drew the following conclusions: "Let us take Kazakhstan as an example. Kazakhstan is currently enjoying a period of total economic and cultural flowering. In the 10th Five-Year Plan alone more than 250 modern industrial sites, major facilities and enterprises were started up in Kazakhstan. Harvesting a billion poods of grain has become customary in Kazakhstan. Along with the Russian Federation and the Ukraine Kazakhstan forms the basis of Soviet food resources."

This is a major event, a great honor for us, the people of Kazakhstan.

The general and specific changes in the economy and culture of Soviet Kazakhstan and in its total social development may be demonstrated completely by specific examples from each oblast and each individual economic zone (region).

One such region is Mangqystau Peninsula, now under discussion. Mangqystau, formerly one of the nationality regions of the western part of the vast Kazakh lands on the shores of the Caspian was, in every sense, a backwoods area. The first 10-15 years of the new age brought about by the Great October Socialist Revolution, the period up until the early 1930's, saw, by and large, the stabilization of the new life on a Soviet basis and the laying down of economic and cultural foundations in Mangqystau. At that time, although it was realized that hypothetical quantities of riches lying under the Magqystau soil were inexhaustible, there was little possibility to investigate them in detail or directly exploit them. I myself was a witness to this and one thing still sticks in my mind. When I was studying at an institute during the years 1933-35, I attended several lectures by the famous scientist and geologist, Academician I.M. Gubkin, on Soviet production forces and, in this context, the riches of Kazakhstan in particular. Looking at a map of Kazakhstan, Academician I.M. Gubkin, then chairman of the Research Council of Production Forces attached to the USSR Academy of Sciences, said the following:

"There are oil and gas deposits in much of the land from the Orynbor and Mughalzhar Regions on south to the shores of the Caspian. These deposits must be used for the good of our nation."

It cannot be concealed, however, that either because of our youth or lack of experience, at that time we failed to grasp the significance of this remarkable hypothesis and scientific view and could not conceive that the production forces of our land would revive as they have at present based upon exploitation of these subterranean riches. When I think about this, I always hold the memory of I.M. Gubkin in honor. I felt this particularly strongly when I traveled over all of western Kazakhstan this year, starting from Mangqystau.

What is happening there is clear for all to see. As a result of energetic and large-scale geological exploration work in the years after the Great Patriotic War, many natural riches have been discovered on the Mangqystau Peninsula through the theoretical work and personal participation of scientists. The brave hypotheses of Soviet geologists starting with I.M. Gubkin have been proven correct. This is another clear proof of the marvelous power of science in a direct production force of society.

The many kinds of problems in the people's economy solved with the aid of science may be conceived clearly from Magqystau examples. For example, in the early 1960's a large and extremely important oil deposit was discovered just where scientists said that it should be, in the Zhetibay Fields, and the black gold lying in the depths of the earth began to benefit the people. This was the first oilfield on the Magqystau Peninsula. This was an extremely happy event not just for the Mangqystau region but for the whole KaSSR. Not long after, a new oilfield was discovered along the Ozen. This is called the Zhangaozen [New Ozen] by local people. Thus, in a very short time, oil and gas fields now famous in the entire Soviet Union have been established on the Mangqystau Peninsula near Zhetibay and the Ozen. Tens of millions of tons of oil have been produced there in about 10 years.

A new, modern city called Zhangaozen is taking shape among the oil fields in a desert where only plants and water were used for the needs of animal husbanders. Thousands already live there: oil workers, gas producers, builders of various machinery and equipment, energy workers, domestic service workers, teachers and doctors.

Signs indicating the presence of oil and gas in the Bozashy Peninsula area, underneath the land and beneath the surface of the sea, have been noticed for some time. For this reason continuous geological investigations have been carried out there in the last 20-30 years.

We will let Tergey Aydarkhanov, first secretary of the Munayly Rayon Party Committee that is guiding the exploitation of Bozashy riches summarize the character and results of these efforts. Aydarkhanov shared the discouragements and joys of the work and is, more specifically, a well-known representative of the geologists who has traveled from one end of the Mangqystau Peninsula to the other, the Bozashy area in particular.

"For many years," he began, "under extremely difficult natural conditions, in areas where dust rises to the skies in summer and winter and where swamps swallow whole tractors, geologists carried out heroic labors, and accomplished their explorations and proved how deep and in what quantities oil and gas deposits existed. Now these deposits are benefiting our nation. The Bozashy and its first million tons of oil were an appropriate contribution to the 26th CPSU Congress. This year the amount of oil produced will be at least 2-3 times greater. In the future the Bozashy fields will produce several times more than Mangyshlakskaya Oblast produces today."

Tens of thousands now work in every nook and cranny of the Mangqystau Peninsula: in numerous socialist enterprises, in oil and gas production, in the chemical and energy industries, in construction that is growing by leaps and bounds, in transportation with its broadly developed sectors, in consumer services extended to the people day and night and, last but not least, in purification of ocean water to meet the needs of the people. Among them are tens and hundreds of leading workers and representatives of communist labor such as K. Alibaev, O. Engsegenov, R. Ziganshin, O. Shadiyarov, S. Tilevlesov, A. Zhakashev, M. Makarov, M. Bogdanov, M. Kenzheghaliev and M. Sadyqov, whose labor and names are known to the entire nation.

One special characteristic that we observed among Mangqystan workers is the fact that they remember those persons who performed devoted labors in their area, those leaders who made a contribution to the development of the region and energetic personages who worked in party, soviet and enterprise organizations. They mention, with warm feelings, persons like Comrades S. Otebaev, M. Ysenov, Kh. Ozbekkaliev and N. Imashev who worked hard to develop the oblast and its production forces.

Mangqystau has been known to the people as a rich region since ancient times. And major changes have taken place there in this connection. Whereas hitherto three kinds of animals (the horse, the camel and the sheep) were mostly what was raised there, now five kinds (with the addition of cattle and pigs) are being bred in large numbers. More products are being produced by these animals than before, and the life of herdsmen has completely altered. Let me give one example. During my trip I stayed with sheepherders, camel herders and horseherders. When I stayed in a felt yurt at the Requl Horse Pastures, I was impressed by the yurt and its size. The framework (latticework) and felt were spanking new and the yurt had only been up 2-3 years. Yurt tape, mats etc, were all hand-made. The yurt was wired for electricity: a radio, a television, a refrigerator and a washing machine had been installed. All kinds of food were cooked on a gas stove. The yurt was full of modern implements and furnishings.

What we saw of the life of the workers of Mangqystau was generally like that.

Thus, whatever the part of the Mangqystau Peninsula, fundamental changes engendering real pride have taken place and are taking place. Nevertheless, several problems remain. Therefore, a research-practical conference on key Mangqystau problems and on production force development was held last summer. Conference discussions began with scientific-technical and economic organizational questions concerning oil and gas production and extended to problems of consumer services to the people. Many scientific reports were presented and valuable ideas and concrete suggestions offered. Several knotty issues that must be solved quickly for the further development of oblast production forces, economy and culture were aired. The principle issues are summarized as follows:

The Mangqystau Peninsula is a very rich area with substantial unutilized natural resources. These resources must be investigated carefully to determine when and in what quantities they can be exploited, i.e. to determine parameters for further development and arrangement of Mangqystau production forces.

It is possible, based on current oblast production, to develop new industrial sectors with rich prospects, i.e. local chemical, construction materials, light and food industries. One of the issues today is to take this in hand as soon as possible.

As stated above, many valuable products are being produced in the region and more will be produced in the future. The technological processes for producing these products must be refined, and the ability to deliver them to consumers in good quality without loss must be developed. The help of science is especially needed in this.

One urgent problem for the people and economy of Mangyshlakskaya Oblast is the water problem--above all, the fresh water problem. We must find out how to exploit all possibilities, subterranean water in particular.

Refinement of the transportation and communications system in the oblast is a question of great economic and social significance and a major indicator of progress.

The Mangqystau landscape demands that consumer services be strengthened. The growth of cities, above all, the development of Fort-Shevchenko, with its rich past, to modern levels, the development of residential construction, strengthening cultural enlightenment, trade and consumer services organizations, etc. must be considered.

There is no doubt that these problems will be solved. However, resources, labor and time will be needed.

11,433
CSO: 1832/120

COAL MINING EQUIPMENT SUPPLIERS PUNISHED

Kiev PRAVDA UKRAINY in Russian 29 Dec 81 p 2

[Article: "At the Ukrainian SSR People's Control Committee -- Mine Equipment"]

[Text] Coal extraction, as we know, depends directly on supplying enterprises with mining equipment and spare parts. These needs are far from being fully met this year. The enterprises of the republic Ministry of Coal Industry are receiving far less extraction, shaft-cutting, and other equipment than they need. For this reason more than 100 walls were brought into operation late this year alone. Moreover, lack of spare parts makes the use of mining equipment less efficient and results in delayed repair. All these things are reflected in extraction.

What are the reasons for this lag? The republic People's Control Committee devoted an inspection to clarification of this question.

It was learned that work on production of new and modernization of series-produced equipment and improving the quality of this equipment is unsatisfactory at a number of machine building enterprises. For example, the Gorlovka Machine Building Plant imeni Kirov is constantly late with deliveries of extraction combines, cutters, winches, and shaft-cutting machines. They have not manufactured a single machine on time in recent years. The plant pays hundreds of thousands of rubles in penalties for failure to fulfill contract obligations and production of poor quality output.

The production of spare parts at the enterprise is poorly organized. In the first 11 months of 1981 they fulfilled 91 percent of the spare parts plan, and only provided full delivery of seven of the 54 especially scarce items.

The picture was somewhat different at the Khar'kov Elektromashina [Electrical Machine] Plant. While fulfilling production plans, they have systematically failed to supply electrical engineering equipment to enterprises of the mining sectors. They do not appear concerned about improving the quality of output either. The plant had to spend more than 60,000 rubles correcting defects in equipment that had already been sent to customers.

The Khar'kov Svet Shakhtera [Miner's Light] Plant is not producing enough spare parts of particularly important types or fulfilling assignments for cooperative deliveries. In October they deliberately overstated production by more than 500,000 rubles worth of output. The plant still produces obsolete scraper conveyors whose working life is one-third of the standard.

Cases of violations of contract obligations and delivery of low-quality items were also found at the Novgorod and Krasnoluchskiy machine building plants.

After reviewing the findings from the inspection, the committee called on the directors of these enterprises to take steps to eliminate problems in supplying equipment and spare parts to enterprises of the coal industry. It was noted that based on the findings of the inspection several officials were held accountable through disciplinary and financial measures.

To partially repay losses caused to the state the committee imposed pay stoppages on V. Ye. Romanenko and A. P. Kolesnik, chief engineers at the Gorloka Machine Building Plant imeni Kirov and the Khar'kov Elektromashina Plant. V. P. Pyatikop, chief of the assembly shop at the Gorlovka Plant who deliberately overstated output by more than 1 million rubles in September, was also held financially responsible.

The Khar'kovskaya Oblast of the People's Control Committee was commissioned to consider the question of the accountability of officials at the Svet Shakhtera Plant.

11,176
CSO: 1822/87

ADVANCE IN DOMESTIC MINING EQUIPMENT

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 10 Jan 82 p 1

[Article by M. Sergeychik, Karaganda: "The Trademark of Karagandagormash"]

[Text] A communication has been received in Karaganda from the Kuznets basin: installation of the unique superheavy-duty 2UKP mechanized complex manufactured at plants of the Karagandagormash [Karaganda Mining Machinery] Production Association is being completed at a cutting face of the Raspadskaya Mine, the largest underground mine in the country.

This complex is the latest thing in domestic mining equipment. It was designed by the collective of the Suburban Moscow Scientific Research Coal Institute for work on longwalls with complex mine geological conditions and difficult-to-collapse roofs. The complex consists of mechanized restraining-supporting type timbering, a scraper conveyer, and a 2KSh-3 coal combine.

"There is no other equipment like this in the world today," said A. Onopko, chief engineer of the Karagandagormash Association. "Suffice it to say that the new complex weighs over 1,600 tons. It can remove a coal seam more than four meters thick and transport it along a wall 120 meters long."

The prototype of the complex, which underwent industrial testing at the Raspadskaya Mine, has already demonstrated its excellent technical-economic characteristics. Daily productivity often exceeded 5,000 tons of coal, which is roughly twice the capacity of conventional mechanized equipment being produced today.

The Karaganda machine builders took a highly responsible attitude toward this honorable assignment from the USSR Ministry of Coal Industry. They were really given no time to prepare for the difficult job. The drawings were studied as they went along, so to speak, making design modifications in certain assemblies and selecting the optimal technological variations. Every engineer and worker contributed to building the complex. For example, the group of specialists headed by V. Shnayder introduced a more progressive technology for machining large sheet metal articles, and it cut labor intensity in half. A. Kayl's brigade of reamers was the first in the sector to begin producing hydraulic posts with a working diameter for the cylinder of 250 millimeters.

Dozens of collectives distinguished themselves. The daily bulletins reported successes by the brigades of O. Zhakipbayev, N. Zakharov, A. Dmitriyenko, G. Zorbidi, and many others. In a short period of time they installed 1,360 tons of metal elements, "laid" a welded seam more than 40 kilometers in total length along the lines of the complex, and manufactured tens of thousands of parts. According to the quality control division all operations were done very well.

"Our plan for this year envisions manufacturing six 2UKP complexes," said G. Garkusha, secretary of the party committee of the association. "This is how the machine builders are responding to the resolutions of the 26th Congress of the CPSU, which demanded an acceleration of the development and beginning of series production of highly productive equipment for extracting coal under complex mine geological conditions."

Among the articles now on the line at machine building plants of the association are KM-130 complexes, Sputnik mechanized timbering, concentrating equipment, self-propelled racks, belt conveyors, and dozens of other types of output. They are well known at coal and copper mines, electric power plants, and construction sites in the country. Products with the brand name Karagandagormash are also exported.

The association has a successful comprehensive quality control system for output, makes broad use of the brigade form of labor organization, and is introducing equipment with numerical programmed control. They are actually using plasma metal-cutting, the flow line system of assembling and welding metal timbering elements, and numerous technological innovations. The Karaganda machine builders are proud of the trademark of their enterprises and are always looking for new ways to increase the production of highly productive mining equipment.

The machine builders have joined the socialist competition to celebrate the 60th anniversary of the formation of the USSR in a worthy fashion and are now doing shock work.

11,176
CSO: 1822/87

DONETS BASIN COAL MINING EQUIPMENT POORLY MADE, MAINTAINED

Kiev PRAVDA UKRAINY in Russian 21 Jan 82 p 1

[Article: "The Miner's Arsenal — How Equipment Is Made and Used at Mines in the Donets Basin"]

[Text] The arsenal of equipment for mine workers is constantly being updated. During the 10th Five-Year Plan the volume of preparatory excavation by combines almost doubled and the level of fuel extraction from fully mechanized faces rose significantly. New KM-87P and KM-88 coal excavation aggregates for thin, gently sloping seams and panel-type machines for steeply dipping seams were introduced.

Scientists, designers, and machine builders make a significant contribution to technical re-equipping of the coal industry. Dozens of scientific research and planning institutes, design bureaus, and science-production associations are working for the miners. In the last five-year plan alone more than 400 scientific-technical developments were introduced and about 100 assignments were carried out to build new equipment and refine the technology of coal extraction.

Nonetheless, the need for new mining equipment is far from being satisfied. A lag has been permitted in organizing series production of mechanized complexes for extracting thin coal seams with difficult-to-cave roofs and unstable side-rock. The questions of full mechanization of production processes are not being resolved well, so the volume of manual labor in the mines is declining slowly.

The Institute

Twenty years ago the highly productive KM-87, KMK-97, and other mechanized complexes were supplied to mine workers. This machinery made work at the face much easier and greatly raised its productivity.

Since that time scientists and machine builders have refined particular assemblies and mechanisms of this machinery and worked with enviable persistence to improve designs. Today the Druzhkovka machine builders alone produce more than 10 types of mechanized timbering. They have been carried away by modernization of these machines and concentrated their main attention on them; in this way scientists and designers have lost their perspective. Now they find themselves facing a new situation: the area of application of proven complexes has narrowed considerably today, and the machinery necessary for the greatly changed geological conditions of the Donets basin is not available.

The party and government have given concrete assignments to accelerate technical re-equipping of the mines. Party and economic agencies of the Donets basin are taking steps to insure a high level of scientific-technical progress in the coal industry. In Donetskaya Oblast, for example, the oblast party committee together with the Donets Scientific Center of the Ukrainian SSR Academy of Sciences and sectorial scientific research and planning-design organizations has developed a regional scientific-technical program, called the "Coal" program. Its objective is to build fully mechanized means for extracting coal from seams less than 0.9 meters thick. It has been decided to resolve the two most critical problems in 1981-1985: develop and introduce new technology; develop and introduce means to mechanize and automate extraction work on thin seams and gently and steeply dipping seams.

Scientists, designers, and machine builders are working very hard to fill the gap and build mining equipment that meets the new requirements. Unfortunately, their efforts do not always bring the desired results. A large part of the blame for this goes to the sectorial institutes. In the last five-year plan only four completed scientific developments were turned over to coal production. For example, at the Donets Scientific Research Institute of Coal only 25 percent of the developments were suitable for introduction. But this institute, in cooperation with the Dongiprouglemash [Donets State Planning, Design, and Experimental Institute of Coal Machine Building] and the Aftomatgormash [Automatic Mining Machinery] Science-Production Association, were supposed to build the KG complex for extracting coal from thin, steeply dipping seams. We are sorry to say that the machine still has not appeared.

The fate of development projects that are actually built is no better. Several years ago the K-120, BKT, 2K-52M, and A-70P2 coal extraction combines were developed. The Gorlovka Machine Building Plant manufactured experimental models, but not one of them went into series production because not one of them passed industrial testing. Why? It was because of significant design errors by the institute.

As experience demonstrates, the "birth" of a new machine can be significantly accelerated by integrated plans and joint creative agreements among institutes, manufacturing plants, and coal enterprises. With regular monitoring by party organizations and broad publicity, they effectively step up the development of new technology.

"The Druzhkovka Machine Building Plant has established business relations with the Donets Scientific Research Institute of Coal and Dongiprouglemash, and this has a good effect on the overall work," says N. G. Glushchenko, chief of machine assembly shop No 13. "But I wish these contacts were stronger. Last year, for example, we fabricated prototypes of the KMT and UKT mechanized timbering for gently dipping seams with complex geological conditions. But they did not go into production on time, and it was entirely because the scientists were very slow with the drawings."

In our opinion, it would be beneficial to strengthen the mutual relations among scientists, machine builders, and mine workers using specific joint creative agreements. It is true that there are similar agreements between institutes and manufacturing plants and between machine builders and coal enterprises. But they are figured for only a certain time, and they do not involve comprehensive cooperation, but rather paired creative cooperation by the developers of new machines and mechanisms. Under this system sectorial institutes are often released from responsibility for technical innovations prematurely. It appears that it would be wise to establish a procedure by which the developing institute would steadily improve its design and bear responsibility for it through the entire period of series production.

The instability of creative ties among scientists, machine builders, and mine workers and the lack of coordination and mutual information concerning the actions of the sectorial institutes themselves lead to some curious results. The Gorlovka machine builders were supposed to manufacture the K-103 combine for the newly developed IKM-103 mechanized complex for working thin seams. The aggregate designed by the Giprouglemash [State Planning, Design, and Experimental Institute of Coal Machine Building] Institute had successfully undergone testing in the mines in the previous year. But the Gorlovka workers were uninterested and did not give the machine proper attention. Until recently they were shuffling it around to other coal machine building plants under various pretexts. The reason is that local designers were developing their own version of a combine for the IKM-103. It may possibly be better than the institute's. But the plant workers do not even have an experimental model of their aggregate. Only very recently, following a stern instruction from above, did the machine builders agree to series production of the institute's version.

Lack of coordination among institutes and the departmental approach to development of new technology lead, as we see, to numerous artificial problems.

Unfortunately, the sector still is not doing well resolving problems of building small mechanized equipment. But we have the specialized Uglemekhanizatsiya [Coal Mechanization] Science-Production Association in Voroshilovgrad, whose function is to reduce the volume of manual labor by mine workers.

The activists of the science-production association have, of course, done good technical developments. Their machines for cleaning out cars, cableways and monorails, and hydraulic block and tackle systems have been widely distributed. But the arsenal of such innovations is still very meager. In the 15 years of its existence the collective of Uglemekhanizatsiya has not produced a well-organized system for full mechanization of production processes. It does not have close, business-like ties with the institutes that are working on mechanization of fuel extraction and preparation of mine excavations. It is not close to production innovators, even though there are large numbers of inventors and efficiency workers at every mine and in every association.

Here is what Yu. G. Shpatyukov, chief of the efficiency and invention sector of the Donetskugol' [Donetsk Coal] Association, said to us on this subject:

"The output of Uglemekhanizatsiya looks pretty poor alongside the achievements of our local craftsmen. The devices developed by the science-production association are usually cumbersome and inconvenient to use. We are forced to refuse them."

"It would be good if one of the leading institutes in the sector would coordinate the activity of all the institutes that are working on behalf of miners. Then it would be possible to channel the efforts of the many different creative collectives in one direction," Ye. L. Zvyagil'skiy, director of the Mine imeni Zasyad'ko of the Donetskugol' Association, said to us when we met.

"This would benefit the scientist, the machine builders, and the mine workers."

The Plant

In recent years the highly productive PK-9R and 4PP-2 shaft-cutting combines and heavy-duty rock loading machines have appeared. But there was an acute need for a unit to excavate in very hard rock. Then finally the Soyuz-19 was designed, the long-awaited shaft-cutting combine that could handle any rock. How much the mine workers needed this machine!

The trouble was, its production broke down in the first stage. The Yasinovataya Machine Building Plant was supposed to manufacture the first batch of these machines a year ago. But to the present day the machine builders have not produced a single industrial model.

This is not the only case where mining equipment designed by scientists has not reached the shops of the plant. There is quite a substantial difference between the number of technical innovations which are given the go-ahead and the number of series produced models. In most cases machine builders give the excuse of inadequate capacities. But this is not exactly the case. Not long ago the same Yasinovataya plant specialized in the production of shaft-cutting mining equipment. Production today has decreased by almost one-half; the Ministry of Heavy and Transport Machine Building has unjustifiably overloaded it with the production of other equipment.

Take the Druzhkovka Machine Building Plant as another example. It was supposed to turn over 41 KM-88 complexes to mine workers this year.

The Druzhkovka workers are obviously doing well. In the last five-year plan the enterprise manufactured 48 types of experimental industrial models and 27 established series, as well as beginning series production of 17 types of new machines.

But the Druzhkova machine builders are still not using their capacities fully. The facts show this. The enterprise still has not chosen to build the necessary testing stand for hydraulic posts. "We do not have the money," they say at the plant. "We send the posts to the experimental center at the Donets Scientific Research Institute of Coal. That is more economical."

But here is the result of this artificial economy. The plant shipped a standardized 2KM-87 coal extraction complex to the Mine imeni Stakhanov of the Krasnoarmeyskugol' [Krasnoarmeysk Coal] Association. How did it turn out? Some 20 of the hydraulic posts were unusable; they would not extend and had no discharge. The mine workers spent almost a month fixing it up. And this was all the result of poor quality control at the plant.

The reputation of the collective of the Gorlovka Machine Building Plant is not always good either. The shaft-cutting equipment it puts out continues to be unreliable. Take just one of the basic elements of the panel aggregates, the beam of the cutter-conveyor. According to standards it should operate for 24 months without overhaul. But in practice it rarely goes more than six months. Hundreds and even thousands of tons of coal are lost because of the unreliability of these elements.

The campaign for quality and reliability of machines and mechanisms is especially important when beginning production of new equipment. This is where the party, trade union, and Komsomol organizations have an important part to play. But as our inspection demonstrated, the party organizations of the coal machine building plants of the Donets basin are still not using the right of monitoring administrative activities adequately and do not involve party commissions in the local areas and people's control groups and posts in monitoring performance of especially important jobs.

But technical re-equipping of the coal industry is a party cause and a job of great state importance.

The Mine

Most of the mining collectives of the Donets basin take a proprietary attitude toward their mining equipment. They use it skillfully, carry out scheduled servicing on time, and replace wornout parts when necessary. As a result, they achieve a high level of productivity and prolong the service life of the equipment.

The famed mine worker brigades of A. D. Polishchuk and N. N. Skrypnik extract a million tons of coal a year apiece using mechanized complexes. More than 100 brigades of mine workers produce 1,000 tons and more a day. And their equipment successfully withstands these workloads.

But there are also still many coal enterprises where shaft-cutting equipment is used until it wears out. And when it breaks down they try to write it off as scrap as quickly as possible. Quite often machines which have not been used for their proper service lives and are still suitable for use become scrap metal.

"Last year the manufacturing plants fell 1,235,000 rubles of equipment short on deliveries to us," complained I. A. Grigor'yev, general director of the Voroshilovgradugol' [Voroshilovgrad Coal] Association.

At the same time he does not mention the fact that equipment is used inefficiently at certain mines of the association. At the Cherkasskaya Mine, for example, they keep two combines, a Kirovets and a Temp, for the same face, and at the Mine imeni Artem they have an IK-101 and a K-103. At the same time, other enterprises need these machines very much.

At many mines a careless and sometimes, to be blunt, criminal attitude toward machinery simply flourishes. How else could we assess the fact that, at the Bryankovskaya Mine (director N. D. Yeliseyev) of the Stakhanovugol' [Stakhanov Coal] Association 57 sections of Sputnik mechanical timbering, 110 GSU metal posts, 20 base pieces, and 249 metal roof timbers were left buried in an abandoned longwall. This was hundreds of tons of metal! At the storage facility of this enterprise three dismantled drilling rigs, a cableway, and IK-101 combine, 17 electric motors, 136 mine cars, and a great deal of other equipment is "corroding away." The figures present a sorry picture.

But the picture is similar at the Mine imeni Bazhanov of the Makeyevugol' [Makeyevka Coal] Association, Mine No 13-bis of the Sovetskugol' [Sovetsk Coal] Association, and the Mine imeni Gazety "Izvestiya" of the Donbassantratsit [Donets Basin Anthracite] Association. Reports from these and other enterprises do not show the true state of affairs. They count as reserves even equipment which is buried forever in abandoned faces.

The situation in the sector is no better with the use of spare parts and recordkeeping for them. There are not even standards that clearly regulate their use. The associations have material-technical supply services, but the mines receive a significant share of their spare parts by bringing them directly from the suppliers. Fearing that their spare parts allocations may be reduced, miners take everything they can get, sometimes even spare parts which they do not need.

What is the result of such a supply system? Every year usable articles worth tens of millions of rubles are written off, transferred to scrap metal, lost in dump piles, and thrown away. At the same time many managers use the lack of spare parts as an excuse for all the shortcomings in operation, servicing, and repair of equipment.

It seems to us that we need a comprehensive approach to solving this complex problem. It would be wise to work out a sectorial system for supply and use of equipment and spare parts, a system that would meet contemporary requirements for efficient management of material resources.

The transition of the Donets coal industry to a new technical footing is already practically completed. In the current five-year plan mine workers will receive KM-103, KD-80, KM-87UM, and KGUD coal extraction complexes, Poisk-2 combines, more powerful cutting and drilling units, and shaft-cutting equipment. It is important for scientists, designers, machine builders, and mine workers to concentrate their efforts on solving the most important problems of technical reequipping of coal enterprises and to renounce narrowly departmental interests.

"We must concentrate attention on the main thing — putting machines and mechanisms created in the laboratory into series production as quickly as possible. We should refuse to be distracted by production of old types of equipment when machine builders can adapt more rapidly and simply to a new footing. In order to prevent the mines from experiencing a temporary 'shortage' of mining equipment, the coal enterprises must broaden the campaign to raise the efficiency of existing equipment, to use it rationally," we were told by S. A. Saratikyants, director of the Donets Scientific Research Institute of Coal.

One cannot disagree with him.

The PRAVDA UKRAINY inspection team was composed of the following members: V. Makogon, leader of a fully mechanized brigade at the Mine imeni Gayevyy of the Artemugol' Association; N. Zhernosek, editor of the large-circulation newspaper ZA GORNUYU TEKHNIKU; A. Tarasenko, head of a division at the Donets Scientific Research Institute of Coal; Ye. Pasishnichenko, chief of the industry division of the newspaper KOCHEGARKA; V. Matlayev, inspector of the Voroshilovgradskaya Oblast People's Control Committee; and A. Zharkikh and N. Ladanovskiy, special correspondents for PRAVDA UKRAINY.

11,176
CSO: 1822/87

DONETS COAL MINES MUST STOP WASTING TIMBER

Moscow TRUD in Russian 13 Jan 82 p 2

[Article by surprise inspection team of I. Gerasimov, mine foreman, D. Pechkovskiy, mineworker, A. Pozhidayev, engineer-economist from the Kirovskaya Mine, and I. Kostenko, brigade leader at the Mine imeni Gagarin: "How the Mineworkers Saw Wood"]

[Text] Coal production is one of the largest consumers of wood. In the central part of the Donets basin more than 60 cubic meters of wood are used for each ton of coal extracted according to expenditure norms. The mine workers of Gorlovka, Yenakiyevo, and Dzerzhinsk alone use 3,000 cubic meters of timber, which is two full railroad trains, in the mines each day. About 10 percent of the wood is reused. The rest is irreversibly lost in worked-out underground mining excavations.

At the Mine imeni Gayevyy in Gorlovka they outfitted several walls with panel aggregates and in 10 months reduced timber consumption by almost 1,000 cubic meters. The neighboring Mine imeni Gagarin, Mine imeni Lenin, and Komsomolets Mine are using new types of timbering on a planned basis and are revising the specifications of roof support and control; as a result the mine workers of Gorlovka have conserved more than 5,000 cubic meters of wood since the start of the year. The collectives of the Krasnoarmeyskugol' [Krasnoarmeysk Coal] and Makeevugol' [Makeevka Coal] associations are also using it economically. But this is the end of the list of positive examples. The large majority of mines in the Donets basin use far too much timber. There are many reasons for this.

"The suppliers are to blame," we were told by A. Khoralets, head of the timber storage facility No 1 of the Donetskugol' [Donetsk Coal] Association. "We often receive nonstandard timbering material which does not meet state specifications. Some of the logs have bark, while others are 20-30 centimeters longer or shorter than the norm. We have mountains of these outsized pieces accumulating, and we cannot find any practical application for them."

The miners complain particularly about Tyumen'lessnabsbyt [Tyumen' Timber Supply and Marketing Organization]. It fulfilled only 30 percent of the plan for delivery of cut mine supports and 15 percent of the plan for so-called short supports, between 0.5 and 1.3 meters. Komilessnabsbyt [Komi Timber Supply and

Marketing Organization] failed to deliver more than 100,000 cubic meters of mine supports in 1981, substituting uncut and nonstandard logs for them. Because of this the miners themselves have to process the round timber, and they do not have special enterprises to do so. They saw the timber on primitive saw frames and no matter how they lay out the logs there is still waste. At storage facility No 1, which we visited, there was a great quantity of chips, bark, and cuttings around the saw frame. There was also a great deal of rotted wood, which caused new mine timbers to become unusable quickly. A. Maranzin, economist at the storage facility, says that losses from processing this wood reach 15 rubles per cubic meter. So the result is that the timber is cut at Tyumen', Arkhangel'sk, and Syktyvkar, but the chips fly in the Donets basin.

A great deal of timber is also lost because of poor management by certain section managers. The surprise inspection team found large stocks of unused timbering in the haulage drift of section 72 of the Mine imeni Kalinin of the Artemugol' [Artemovo Coal] Association (section chief is N. Kovalenko). In the ventilation drifts of sections 126 and 132 of the Mine imeni Gagarin we saw large numbers of waterlogged, unusable support timbers. We wondered, if for some reason this timber was not used on the wall, why not send it back up to the surface now, dry it out and put it to use? Why wait until it rots away completely? All these things taken together result in enormous figures for overexpenditure of a valuable construction material. The Sovetskugol' [Sovetsk Coal] Association used up 27,000 cubic meters of timber beyond the norm last year, while Donetskugol' went 26,000 cubic meters beyond the plan. For the Ukrainian SSR Ministry of Coal Industry as a whole the overexpenditure for the first 10 months of 1981 was 197,000 cubic meters, worth 6 million rubles.

We must work harder to introduce new types of timbering and reuse timber. Hundreds of thousands of cubic meters of valuable wood can be saved without detriment to production.

11,176
CSO: 1822/87

KAMCHATKA COAL EXPLORATION TO INCREASE

Moscow PRAVDA in Russian 11 Jan 82 p 3

[Article: "Resources of the Kamchatka Region"]

[Text] The USSR ministries of Geology and Coal Industry sent responses to the article published on 16 December 1981 under the headline "Resources of the Kamchatka Region." First deputy minister of coal industry M. Shchadov informs that, in the opinion of the USSR Ministry of Coal Industry, the best way to satisfy the fuel needs of Kamchatskaya Oblast is to step up exploratory work at the Korfovskoye brown coal deposit which has been opened by the RSFSR Ministry of Fuel Industry and increase the capacity of the Korfovskoye open-cut mine to 600,000 tons of coal a year in the medium future. Deputy USSR minister of geology V. Volkov also believes that the fuel shortage on Kamchatka can in large part be satisfied by extracting coal from deposits existing there. To intensify coal exploration on Kamchatka the ministry has increased appropriations for the current year and is stepping up work in two sectors of the operating Korfovskoye deposit. In the near future plans envision reconstruction of the existing open-cut mine there to increase its production capacity to 200,000 tons of coal a year The open-cut mine of the first sector of the Medvezhinskoye deposit will be completed in 1982, and sector No 2 will be ready in 1984. The other promising deposit for exploitation is Krutogorovskoye. The USSR ministry ordered the republic ministry to begin geological exploration there immediately and to turn over the necessary findings to the Dal'giproshakht [Far Eastern State Institute for Planning Mines] in 1984 so the institute can prepare technical-economic substantitation for its industrial development. According to the communication from Comrade Volkov, a number of sulfur manifestations are known in Kamchatskaya Oblast, but the USSR State Balance of Mineral Reserves counts only one, the Maletoyvayamskoye deposit. It was explored in 1968-1971 and is large. But because of low technical-economic indicators and failure to solve the problem of removing sulfur from the ore, work at the deposit was halted. At the present time the L'vov Polytechnic Institute and the All-Union Scientific Research and Planning Institute of Sulfur have conducted experiments on removing sulfur from the ores of the Maletoyvayamskoye deposit by thermal means. The positive results of their experiments make it possible to return to the question of the economic value of the deposit. The USSR Ministry of Geology is working on this question with the Ministry of Mineral Fertilizer Production and when it is resolved will again take up the task of reassessing the Maletoyvayamskoye deposit. A reliable raw material base for building materials has been established in the oblast and will meet the needs of the industrial ministries and departments for the main types of building materials.

11176
CSO: 1822/27

STATUS OF URENGOY GAS FIELD DEVELOPMENT DESCRIBED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 27 Jan 82 p 1

[Article by M. Umanskiy: "Towards the Urengoy Billion"]

> [Text] A level of daily extraction of natural gas of about 280 million m^3 has been recorded in the central dispatcher station of the association "Urengoygazdobycha." The Tyumen' field workers have made a new step toward attaining an enviable goal, 1 billion m^3 per day. After guaranteeing the highest increase in the history of Urengoy in the first year of the 11th Five-Year Plan, 32 billion m^3 of the most valuable raw material, the gas extractors are confidently increasing the rates of development of the polar underground storehouse.

The Urengoy gas workers received a solid addition to their facilities on the eve of the new year: the second shop of the sixth unit of integrated gas preparation began to operate. This is a true plant where the crude gas that is lifted from the depths is converted into a commercial-grade product before the many thousand-kilometer marathon to the west and center of the country. The silver aluminum structures which have been erected above the tundra are visible far even in the polar night.

Scientific and technical progress has taken a big step at Urengoy. It is paradoxical at first glance: with a general trend towards increase in the output, each new field looks more compact than the previous one. At the last of them, for example, the specialists, many of whom had passed the school of the Medvezh'ye field, were able to do without a separate building with gas measurement assembly. The introduction of another leading idea put a reliable damper on the large losses of scarce chemical reagent, methanol. The creative search was greatly responsible for the 1.5-fold increase in the technical-economic indicators of the fields over the planned!

Inquiry

A comparison of the economic indicators of the newly designed plants with the already active ones indicates that the use of modern technological solutions reduces the cost of the construction-installation work by 2.5 million rubles, the labor outlays by 20 thousand man-days, and the metal consumption by 1,100 T.

As for the already operating facilities, the reconstruction of only the first four units will permit an increase in their output by a fourth, that is, essentially introduce another plant. The pure saving is R 160,000. This also has a positive effect on the net cost of the extracted gas: every thousand cubic meter of gas will become less expensive by 27 kop.

A similar pattern is observed at the newly started-up units. Their updating in the construction process will raise their total output by 15 billion m^3 per year. As is apparent, the potentialities of the fields can be drastically improved without a significant increase in capital investments.

It is unfortunate that these potentialities are not used equally today. Whereas the first fields erected at Urengoy operate even with an overload, the last two, including the sixth, operate at only half their output. What is the matter?

"It is the lagging in the build-up of the field," the director of "Urengoygazdobycha," USSR State Prize laureate I. Nikonenko states resolutely. "Even the drillers under the harsh conditions of the polar region would be able to create a well fund sufficient for operation. But the fields still need steel arteries of collectors in order to receive the gas from the "clusters" of wells to the finished product. Meanwhile, the builders of the Ministry of Construction of Petroleum and Gas Industry Enterprises have laid less than half of the 137 km of pipeline in the tundra."

The gas extractors have grounds to insist that the Ministry of Construction of Petroleum and Gas Industry Enterprises increase the material, personnel and technical resources of the northern wing of its subdivisions. In addition to erecting four units of integrated gas preparation there, the builders are faced with creating a strong rear for the time when the drillers reach the deep layer rich in gas condensate this year. The first such well is already operating, supplying the experimental unit with condensate in order to produce diesel fuel, a real miniature plant.

Proper due should be given to the Urengoy workers who were able to produce motor fuels that do not freeze in the severest frost, as well as to improve the unit productivity 1.5-fold. Nevertheless, 6,500 T of fuel is a drop in the sea of today's demands of dozens of organizations. Urengoy does not need a miniature plant, it needs a real plant of inexpensive fuel that operates on local raw materials.

There is yet another problem of the Urengoy rear, energy. The director of the production association "Tyumenburgaz," Yu. Ivchenko related with regret how the acute shortage of energy caused the idling of the highly productive machines on electric drive. The drillers were forced to use diesel drive. The city itself has not yet been hooked up to the country's unified power system.

But even when the LEP-500 arrives at the field from Surgut, the energy shortage will not be eliminated. This causes the far-sighted managers to speak of the need for a second reserve line, the construction of the Urengoy TETs.

Like the fields, Novvy Urengoy is experiencing uncontrollable growth. Multistory houses, schools, bakery, department store, kindergartens (last year another

560 youngsters were placed in the settlement's two comfortable complexes), all of this is already standing where there was an empty field several years ago. The leading teams of builders of other cities, primarily Leningrad, have come to aid Urengoy today. I was a witness to the fact that dozens of worker families from the outskirts began the new year in the next main 9-story house that they had built. The builders will erect thousands of square meters of housing in the near future. Now it is important not to permit a lagging in the rear even in the housing construction, and to construct treatment plants, heating and water lines, and build-up the territory in time.

The world's largest gas field must provide about 250 billion m^3 of gas in the last year of the five-year plan, at the same time guaranteeing the basic growth in the industry of blue fire. One can now firmly assert that the strong, united collective of gas workers, builders and installers have the forces and the potentialities for a successful resolution of the task set by the 26th Party Congress.

9035
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GAS INDUSTRY CONTINUES GROWTH IN TAYMYR

Moscow PRAVDA in Russian 25 Jan 82 p 1

[Article by A. Dzyura, outside correspondent of PRAVDA: "Gas of Taymyr"]

[Text] We Report the Details

A large unit which is designed to process condensate into liquid fuel recently began to operate in the center of the Taymyrskiy Autonomous Okrug, Dudinka. The first tons of gasoline and diesel fuel have already been sent to the consumers. When the unit begins rated output, it will free the kray of the need to import a large quantity of fuel.

The gas industry is the youngest sector in Taymyr. The Soleninskiy field is successfully operating. The daily average level of natural gas extraction here will be brought to 15 million m^3 this year. Two new areas are being mapped, North Soleninskiy and Pelyatkinskiy. There is a lot of condensate in their depths, in addition to gas.

The use of natural gas instead of coal already bears a large economic advantage. The production of copper, nickel and cobalt has become less expensive at the Noril'sk mining-metallurgical kombinat. Coal mines have been conserved and thousands of released miners are now extracting ore or constructing underground mines.

It is very difficult to extract gas from under the ground in these harsh krays. The facilities of the production association "Noril'skgazprom" and the trust "Noril'sktruboprovodstroy" are spread over an area on which several European states could be arranged. There are no roads anywhere and nothing can be done without airplanes and helicopters, tractor-sled trains and four-wheel drive vehicles. But the people have learned to solve complicated problems. For example, the last five producing wells were completed by the collective of the deep drilling expedition and transferred to the operators in periods considerably shorter than the standard. The association "Noril'skgazprom" has repeatedly taken the lead in the competition in its sector. The chairman of the association profkom [trade union committee] A. Cherepanov relates:

"The counter plan and the commitments that we adopted for 1981 surpassed the state assignment by 200 million m^3. This frontier has been passed: the plan has been covered by more than one-third of a billion m^3."

"Engineering solutions and rapid elimination of developing omissions helped," says the association director V. Burdin. "The people worked selflessly, for example, in removing the flaws at the 32nd and 40th kilometers of the Messoyakha-Solenoye gas main. They were able to "cut" a new fairly lengthy pipeline into the active main in a short time. The developing cooperation with scientists promoted the success. The colleagues of the All-Union Scientific Research Institute of Gas helped to introduce a method of so-called controllable freezing of the wells which accelerated the drilling."

Life raises problems for the gas workers at each step. How do they overcome vibration of pipes that develops in strong wind loads? How do they convert the so-called fatigue failures of metal and welded connections that change their properties under the influence of low temperatures? These are only some of the questions for which the specialists are seeking answers.

It is not easy to achieve accurate work of the gas arteries under the harsh conditions of the extreme north. However, the task is being successfully resolved.

9035
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GAS LIFT METHOD PRODUCES RESULTS IN TYUMEN'

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 28 Jan 82 p 1

[Article: "Reserves of the Oil Bed"]

[Text] Extraction of oil from the depths of the Pravdinskiy field which is in the northern latitudes of the Tyumenskaya Oblast using 100-atmospheric pressure is made possible by the new compressor units for gas lift which have been installed here. Developed by the French firm "Krezo-Loire," they are more powerful, more reliable to operate than the previously employed compressors. They have been supplied for the West Siberian fields as a part of the economic cooperation of the two countries.

The gas lift method of oil extraction which is being used more in the Siberian fields not only significantly increases the influx of fuel from the underground beds, but also permits effective use of the casing-head gas that is extracted together with the oil. After purification of the liquid fuel in surface units, the gas is again pumped at high pressure into the field. It foams the oil and thus helps to lift it in the producing well.

After completing installation of compressors for the gas lift at the Pravdinskiy field, the brigades of the administration "Spetsnefteenergoremont" were sent to do the same work at Samotlor.

The directions in which the activity of the collective from the administration is developing to improve the efficiency of the output of the oil beds were the topic of the conversation of the TASS correspondent and the head of "Spetsnefteenergoremont" V. Molochnikov.

"In order to present the geography of the application of forces by the specialists from our adminstration that was set up on the rights of a trust, I will note that the repair subdivisions are active at the oil fields of West Siberia and the Ukraine, in the Arctic and Central Asia, in Azerbaijan, Volga region, Belorussia and many other regions of the country. In addition to work to restore different field power equipment, we specialize in introducing different methods of modifying the oil bed to increase extraction of valuable raw material."

A large amount of the installation and repair work is also done on the equipment to maintain formation pressure at the same Samotlor field and other oil deposits of the Tyumen' north. Pumping water into the depths, replacing oil with a heavier liquid is one of the most popular methods of modifying the productive bed in West Siberia.

The administration specialists have participated in the installation and adjustment of steam generators at the Usinsk oil field in the Komi ASSR. The units were sent to our country by one of the American firms. The oil which lies in the depths of this field has very high viscosity, and the generators, pumping hot steam into the bed, thin the tuel and facilitate its transporting to the surface. Now the plant "Krasnyy kotel'shchik" has begun to produce these units.

"The tasks set by the 26th CPSU Congress for modification of the oil beds," V. Molochnikov continues, "require great efforts from the collective to improve the entire technological process and expand the production base. Thus, for example, it is necessary to build a plant by the end of this five-year plan in Malakhovka where exchangeable parts will be manufactured for steam generators, worn-out parts will be restored for gas lift compressors using metallized spraying, and spare parts will be manufactured for the electric submersion pumps. The rapid rise of oil extraction in the country and the related increase in the volumes of work for more efficient operation of the fields will cause an expansion of the production program of our administration as well: by the end of the five-year plan, the collective must fulfill construction-installation work double the current, by 60 million rubles."

9035
CSO: 1822/99

BRIEFS

NEW DONETS MINE—Voroshilovgrad, 26 Dec—One of the largest underground mines in the Donets coal basin has begun operations. This is the Dolzhanskaya-Kapital'naya Mine of the Sverdlovantratsit [Sverdlovo Anthracite] Production Association. Anthracite has begun coming up in a steady stream from eight cutting faces. The projected capacity of the first phase of the enterprise is 10,000 tons of coal a day. The mine has a new solution to the transportation problem. The entire mine field from east to west is dissected by a large-diameter horizontal excavation which houses belt conveyors with a productivity of 20,000 tons of bulk rock a day. Materials and equipment are delivered to the face by a multirail road. The mine workers travel to the job and come back up on this "escalator." All production processes are mechanized and automated. A group concentrating factory to process the anthracite coal was built and accepted for operation together with the mine. Its design includes a number of bold technical concepts. The factory has a 134-ton car tipper, used for the first time in domestic coal concentrating. It can handle one railroad car a minute. The total productivity of the concentrating factory is 30,000 tons of bulk rock a day with two shifts of work. [By P. Mazalov] [Text] [Moscow PRAVDA in Russian 27 Dec 81 p 1] 11176

LEADING DONETS COAL WORKERS—Voroshilovgrad, 27 Dec—Today the brigade of Nikolay Skripnik of the Mine imeni M. V. Frunze of the Roven'kiantratsit [Roven'ki Anthracite] Association sent up its 1 millionth ton of anthracite coal since the start of the year. This heroic collective has produced 1 million tons of coal from a single face four years in a row. The achievement was very hard this year. In June and July the face they were working ran out, but the new one was not prepared on time, so instead of above-plan extraction they fell 90,000 tons of coal behind. But the great professional skill of the miners coupled with their shock labor produced results. In recent times the brigade has been extracting 5,000 tons of coal and more from the face each day. A meeting was held at the mine in honor of this labor victory. The "millionaire" brigade took on the obligations of producing 1 million tons of anthracite from one face in the second year of the five-year plan, raising labor productivity of each brigade member to 420 tons a month, and saving 50,000 rubles. [By P. Mazalov] [Text] [Moscow PRAVDA in Russian 28 Dec 81 p 1] 11176

DONETSKUGOL' ASSOCIATION 1982 GOALS—The miners of the Donetskugol' [Donetsk Coal] Association have obligated themselves in 1982 to extract 300,000 tons of coal beyond the plan, including 270,000 tons of coking coal, to sell 4 million rubles worth of output beyond the plan, and to see that 12 working faces extract more than 1,000 tons of coal a day and 10 faces working thin seams extract 500 tons a day and more. They have resolved to conserve 39 million kilowatt-hours of electricity and 5,400 tons of standard fuel, as well as to reuse 31,000 tons of metal timbers and reduce the prime cost of the coal that is extracted by 150,000 rubles. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 3, Jan 82 p 3] 11176

VORGASHORSKAYA MINE RESULTS—Vorkuta—The Vorgashorskaya Mine of the Vorkutaugol' [Vorkuta Coal] Association, the largest underground mine in the country, yesterday produced its 5 millionth ton of coal since the start of the year. This is 500,000 tons more than its projected capacity. The success was made possible by skillful use of mining equipment and accelerated development of preparatory work. During socialist competition under the slogan "60 Weeks of Shock Labor for the 60th Anniversary of the Formation of the USSR," the third section headed by engineer P. Yermakov extracted 1 million tons of coal from a single face. [By V. Krukovskiy] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 16 Dec 81 p 1] 11176

DOLZHANSKAYA-KAPITAL'NAYA MINE OPENED—The first coal from the new Dolzhanskaya-Kapital'naya Mine in the Donets basin came up on 25 December. The enterprise has a capacity of 3 million tons of anthracite a year. The nine operating faces have modern mining equipment, mechanized KM-88E complexes. Each such "iron" wall will extract at least 800 tons of fuel a day. The coal goes immediately to measuring-storage bins and then on to the group concentrating factory, which can produce up to 6.8 million tons of concentrate a year. This enterprise is unique in a sense, because of its many technical and industrial innovations and successful engineering concepts. Examples are drying the bulk rock in a fluidized bed, the increased area of the jigging machines, the power of the car tipper and vacuum pump, and full automation of control of the industrial process. In short, many types of equipment are being "used for the first time." Twenty-four trusts and dozens of specialized administrations participated in building the mine and group concentrating factory. In all about 5,000 persons were employed on the project. They built the headframes of the main and auxiliary shafts, the buildings of the concentrating factory and the administrative-everyday services combine, as well as other structures. But the largest amount of work was done underground. Many main lines were laid there at the 602 and 685 meter horizons. More than 31 kilometers of mine excavations were prepared deep underground. They are, so to speak, the streets and alleys along which people and machinery move, along which air is fed in and coal extracted from this new natural storehouse is sent to the surface. [Text] [Kiev PRAVDA UKRAINY in Russian 26 Dec 81 p 3] 11176

OUTSTANDING COLLECTIVE REACHES GOAL—On 29 December a meeting was held at the Trudovskaya Mine of the Donetskugol' [Donetsk Coal] Association to celebrate the great labor victory of the brigade of cutting face workers headed by Hero of Socialist Labor Anatoliy Denisovich Polishchuk. For the fourth year out of the last five this famed mining collective produced 1 million tons of coal from a single face. The success this year was secured by introducing the highly productive IGSh-68 coal extraction combine and a powerful SP-202 conveyor. The great professional skills of each member of the brigade also played a large part.

At the meeting the miners promised to keep up the pace of work in the second year of the 11th Five-Year Plan, to extract 1 million tons again. [By N. Ladanovskiy] [Text] [Kiev PRAVDA UKRAINY in Russian 30 Dec 81 p 1] 11176

DONETSKUGOL' MEETS 1981 GOALS—The miners of the Order of Lenin Donetskugol [Donetsk Ugol] Production Association, responding with their work to the resolutions of the 26th Congress of the CPSU, fulfilled their planned assignments for the first year of the current five-year plan for coal extraction and the principal technical-economic indicators. Guided by the decisions of the November 1981 Plenum of the CPSU Central Committee and the statements of Comrade L. I. Brezhnev on allout development of the country's fuel-energy complex, the working people of the association joined actively in socialist competition in honor of the 60th anniversary of the formation of the USSR and adopted the following obligations for 1982: Extract 300,000 tons of coal beyond the plan during the year, including 270,000 tons of coking coal, on the basis of raising the technical level of production, broad introduction of progressive methods of labor organizations, better use of mining equipment, and raising the professional skill of the mine workers; sell 4 million rubles of output beyond the plan; given the existing complete mechanization of coal extraction in complex mine geological conditions raise the level of extraction by the most progressive method using mechanized complexes to 46 percent and overfulfill the plan for labor productivity by at least one percent; insure that 12 working faces extract more than 1,000 tons of coal a day and that 10 faces working thin seams extract more than 500 tons a day; do 60 kilometers of mine excavation by high-speed methods; conserve 39 million kilowatt-hours of electricity and 5,400 tons of standard fuel by streamlining industrial processes and rational use of materials and energy resources, reuse 31,000 tons of metal timbers, and reduce the prime cost of the coal that is extracted by 150,000 rubles; put into use more than 114,000 square meters of residential space and children's preschool institutions for 280 children, serve about 39,000 working people and members of their families in sanitariums, rest homes, and Pioneer camps, and put most of the miner cities and towns into model condition; carry out a program of steps to develop subsidiary farming operations, build two hog sheds for 1,000 head, and carry out major overhaul on 10 hothouses with a total area of 16,000 square meters. The miners of the association are profoundly grateful to the party and Soviet Government for raising the wages of coal industry workers and for steps that were taken to accelerate the re-equipping of underground mines and to increase extraction of coal by the open-cut method. They assure the Leninist Central Committee of the CPSU, the USSR Council of Ministers, and General Secretary of the CPSU Central Committee, Chairman of the Presidium of the USSR Supreme Soviet, Comrade L. I. Brezhnev that they will make every effort and use all their knowledge and experience to accomplish the obligations they have assumed and thus make their contribution to increasing our country's fuel-energy potential. The working people of the Donetskugol' Association appealed to all workers of the coal industry to broaden socialist competition to fulfill the assignments of the current year and the 11th Five-Year Plan as a whole ahead of schedule and to celebrate the 60th anniversary of the formation of the Union of Soviet Socialist Republics in worthy fashion. The socialist obligations were discussed and adopted at meetings of the working people of the enterprises and organizations of the Order of Lenin Donetskugol' Production Association. [Text] [Kiev PRAVDA UKRAINY in Russian 10 Jan 82 p 1] 11176

COAL SECTOR'S 1982 GOALS--On 5 January a group of prominent coal miners, followers in the Stakhanov tradition, met in Moscow to sign agreements on socialist competition for the second year of the five-year plan. Increasing coal extraction has an important part in improving the country's fuel-energy balance. Coal extraction is to be raised 770-800 million tons a year during the 11th Five-Year Plan. The high rate of development in the sector will be achieved by expanding open-cut mining at the large strip mines of Siberia and Kazakhstan and supplying the latest equipment to the underground mines. Mechanized extraction complexes and shaft-cutting combines have radically changed the nature of mine worker labor and greatly raised its productivity. The movement of 1,000-ton brigades, brigades of mine workers who extract 1,000 or more tons of coal a day from a single wall, has begun to develop on the basis of this technology. This figure has become the norm for more than 400 collectives in the sector. The 1,000-ton brigade movement will be the foundation of socialist competition among mining brigades in the 11th Five-Year Plan. Many of them are obligating themselves to extract at least 500,000 tons of coal and shale a year. The program of national economic intensification worked out by the 26th party congress and the decisions of the November 1981 Plenum of the CPSU Central Committee placed new challenges before our country's miners. Broad dissemination of the know-how of the best collectives is now becoming especially important. These collectives are headed by mine workers M. Chikh, I. Strel'chenko, N. Skrypnik, A. Belikov, and G. Smirnov, nationally prominent mine workers who took part in making the agreement. The leaders called on all working people of the sector to broaden socialist competition for successful fulfillment of the assignment of the five-year plan. [Text] [Kiev PRAVDA UKRAINY in Russian 8 Jan 82 p 1] 11176

KUZNETS TIMBERING RECYCLED--Novokuznetsk--The mine workers of the Novokuznetskaya Mine have raised the level of metal timbering removed from exhausted mine excavations to 80 percent. Almost all the metal is recycled to secure mine excavations. This is the best result in the Yuzhkuzbassugol' [Southern Kuznets Basin Coal] Association. The miners of other enterprises are learning from the example of this collective's proprietary approach to extremely scarce materials. The association has prepared a list of organiztional steps that will make it possible to reuse at least 8,000 tons of timbering metal this year, 50 percent more than last year. [By V. Kladchikhin] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 27 Jan 82 p 2] 11176

KARAGANDA BASIN'S GOALS--Karaganda--The mine workers of the Karaganda coal basin have adopted the obligation of celebrating the second year of the 11th [Russian text mistakenly reads "10th"] Five-Year Plan with new labor successes and to greet the 60th anniversary of the formation of the USSR in worthy fashion. They have resolved to see that 69 walls produce 1,000 tons of coal a day in 1982 and 38 shaft-cutting brigades work at high speed. The pioneers in competition are the prominent mining collectives in the basin headed by masters of extraction and high-speed shaft-cutting N. Gladkikh, A. Romanyuta, N. Kurnikov, and I. Faber. An agreement was concluded in a solemn ceremony among 16 extraction sections and eight shaft-cutting brigades. They resolve to continue competition to extract 500,000 and more tons of coal from one wall. The leading collectives called on all the mine workers of the basin to increase the load on mechanized walls and to have high-speed shaft-cutting brigades in every coal enterprise. This appeal has already been disseminated widely. The pace of work set in the first weeks of the year testifies that the Karaganda coal workers can meet the obligations they have assumed. [By N. Belov][Text][publication data not given] 11176

NEW KUZNETS DEPOSIT OPENED—Kemerovo—Industrial development has begun at one of the most promising sites in the Kuznets basin, the Karakan deposit. In the broad lagoon of an ancient sea nature accumulated 52 coal seams. Total reserves are estimated at 3 billion tons. The coal has high thermal power. The first phase of the Karakanskiy-1-2 open-cut mine was supposed to go into operation in 1984. But the mine workers of the Kemerovougol' [Kemerovo Coal] Association moved this date up. They suggested construction by stages and launched a large section in operation ahead of schedule. The first train carrying Karakan coal has been sent to the consumers. A total of more than 210,000 tons of high-grade fuel will be extracted here this year. [By P. Voroshilov] [Text] [Moscow IZVESTIYA in Russian 24 Jan 82 p 1] 11176

STREAMLINING RAIL SHIPMENT—Scientific associates at the All-Union Scientific Research Institute of Railroad Transportation, working together with specialists from the State Institute for Technical-Economic Study and Planning of Railroad Transportation and from higher educational institutions under the general direction of candidate of technical sciences A. D. Chernyugov, have developed recommendations to improve the organization of coal shipping. The organization of circular routes on the Virgin Lands Railroad made it possible to increase the daily load by 260 cars while at the same time reducing the working fleet of cars at Ekibastuz station by 470. The time required to prepare cars for loading is reduced by 2.8 hours. It has been calculated that the economic effect of using circular routes on the Virgin Lands road exceeds 3 million rubles a year. The total savings from implementing the suggestions of the institute with respect to organization of circular and service routes, creating reserves of empty gondola cars, turning them over in rhythmic fashion, and so on will be more than 10 million rubles a year. [Text] [Moscow GUDOK in Russian 8 Dec 81 p 2] 11176

NEW EXTRACTION TECHNIQUE—Novokuznetsk—An interesting technical experiment has been completed at the Novokuznetskaya Mine: two coal longwalls cut next to one another were worked alternately by one complex without stopping extraction. The extraction unit was not moved from one wall to the other as usual, but simply turned 180 degrees and started on the new wall in the opposite direction. This operation made it possible to extract an additional 20,000 tons of coal. The experiment was conducted in cooperation with scientists from the Moscow Mining Institute. Its results gave mine workers another effective means of reducing losses of underground wealth. The innovation has aroused the interest of specialists at mines where the primary reserves are coming to an end and coal is being extracted in difficult "nooks and crannies." [By V. Kladchikhin] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 16 Dec 81 p 2] 11176

DONETS MINE MEETS GOAL—Khartsyzsk—A chunk of coal with the brief inscription, "One million tons" recently appeared in the ceremoniously decorated Kommunist Mine of the Oktyabr'ugol' [October Coal] Production Association. This was the amount of coal produced by the miners in the first year of the 11th Five-Year Plan. It is more than twice the projected capacity of the enterprise. This is the first time the mine collective has reached this mark. They shipped more than 158,000 tons of high-grade coal beyond the plan to customers. Conditions were created for smooth work in the present year and for successfully standing labor watch in honor of the 60th anniversary of the formation of the

USSR. An old and strong friendship links the mine workers of the country's two largest basins, Donets and Kuznets. The friendship of the collectives of the two coal centers has gone on through the years, over the distances. Last year the obligations of the collective of our mine and the collective of the Kuznets Mine imeni 7 Noyabrya of the Leninskugol' [Leninsk Coal] Production Association were published in SOTSIALISTICHESKAYA INDUSTRIYA. We recently summarized our work in the first year of the 11th Five-Year Plan. Both collectives fulfilled their socialist obligations. Exchange of know-how and mutual support enabled us to significantly raise labor productivity and increase the pace of coal extraction. A favorable situation has developed for our work in the present year. Our mine has no lagging collectives. We have established cutting face reserves of almost 100 percent and the great professional skill of our mine workers makes it possible to use mining equipment most efficiently. In the second sector where P. Goncharuk, Hero of Socialist Labor and Winner of the USSR State Prize, is brigade leader, the KM-87E complex has already worked its third block. This is how, leaning on one another, we move ahead toward the 60th anniversary of the formation of the USSR, the holiday of the great friendship of the Soviet peoples. We have resolved to extract 100,000 tons of fuel beyond the plan this year. [By I. Pavlenko, director of the Kommunist Mine] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 19 Jan 82 p 1] 11176

CSO: 1822/86

GENERAL

IMPROVING ECONOMY OF MANGYSHLAK COMPLEX DISCUSSED

Moscow APN DAILY REVIEW in English 18 Feb 82 p 1

[Article by S. Mukashev, first secretary of the Mangyshlak Regional Party Committee of the Communist Party of Kazakhstan; abridged version of an article originally published in EKONOMICHESKAYA GAZETA No 6, Feb 1982]

[Text] The example of the Mangyshlak territorial and production complex shows how an intensive and large-scale development of natural resources in new regions improves in principle the standards of development and the structure of productive forces and enhances the role of the region within the entire national economic complex of the country. This powerful territorial and production complex was set up in a vast desert region, bordering on the Caspian Sea in less than two decades.

The first trainload of Mangyshlak oil was delivered to the country's oil refineries in 1965, and in the past year local oilmen produced the two hundred millionth ton of oil. Here, in Mangyshlak, specialists have solved the problem of commercial salt water distillation for the first time in world practice, commissioned the world's first fast-neutron reactor, laid a unique "hot" pipeline, which delivers local high paraffin-base petroleum to the Centre. The desert is now covered with networks of highways and power-transmission lines. Numerous towns and settlements have gone up there. The very pleasant and modern town of Shevchenko has been built on the eastern shore of the Caspian Sea.

The Mangyshlak complex with its oil, gas, petrochemical, fishing and construction materials industries is making a great contribution to the all-Union division of labour.

The complex annually produces more than 16 million tons of oil and 3.3 billion cubic meters of gas. The local oil industry is a pivot which joins all other elements of the complex into a single whole.

Over the past few years certain changes have taken place in the economic structure of the complex. Though the oil and gas producing and processing industries retained their priority rates of development, a new industrial branch appeared and began rapidly developing--chemistry. The first capacities of the Shevchenko factory of plastics were put into operation. The factory, when it is completed and brought to design capacity, will be one of the biggest in Europe. Considerable progress has been achieved in the development of auxiliary enterprises, like the power generating, machine-building, metal working, construction materials, food and light industries, transport and communication facilities.

The development of the Mangyshlak complex has been closely followed by the Party and the government at all stages. The decisions of the 26th CPSU Congress provide for its further steady and rapid development. These decisions are an inexhaustible source of inspiration for the Communists and the working people of the region, a powerful incentive encouraging efficient work, high concentration, responsibility and will-power.

As the region is being intensively developed economically and new productions are budding, the formation of stable, closely knit bodies of workers, the creation of a good psychological climate and excellent conditions for fruitful work assume special significance. In the process of selfless work aimed at the implementation of the 26th Congress' decisions, the regional Party organisation has been gaining a wealth of experience in the organisation of work, education of the masses and management of the economic process.

Councils of Party secretaries and joint Party meetings of workers of cooperating plants have been broadly practiced at the major production facilities with numerous personnel, which are run by different departments. There is an effective system of keeping the working people up-to-date on current political affairs. On the special days of political education organised on a regular basis, executives and political information officers meet the people either at their place of work or at place of their residence.

The plan of economic development provides for increasing the production of oil and gas condensate to 18 million tons in 1985. The entire increment will be ensured by the new oilfields in the Buzachi Peninsula. The plans provide for their accelerated development and opening ahead of schedule. To ensure the fulfillment of these tasks, the Party committees will have to intensify their organisational activities and improve methods of Party supervision.

In the current five-year period, the drilling specialists of the Mangyshlakneft association will have to drill a total of 3,900 operational wells, which is two times more than what was drilled in the tenth five-year period. This means that they will have to drill almost 1 million meters of wells a year. The 1982 tasks of the oilmen are very high. They plan to produce more than 16.5 million tons of oil and gas condensate, and 3.3 billion cubic meters of natural and casing-head gas. It will be necessary to drill through 900,000 meters of mountainrocks and more than 500 operational and reconnaissance wells.

The Kazakh gas processing plant will be playing an important role in the complex economic development of the region. It will process the entire volume of produced casing-head gas and turn out ethane, a raw material for the plastics factory. Local oil will be produced by the cheap gas-lift method.

Agriculture is an important component element of the Mangyshlak complex. It turns out the republic's cheapest mutton, the greatest quantities of valuable camel-hair wool and high-grade Astrakhan lambhides. Major process has not been achieved in livestock breeding or in prime-cost reduction due to the lack of a fodder base.

The development problems of the Mangyshlak territorial and production complex were discussed at the Republican scientific conference, which has recommended practical measures for a more comprehensive exploitation of local resources.

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END

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USSR Report

ENERGY

No. 100

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USSR REPORT

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CONTENTS

ELECTRIC POWER

Infrastructure Review at Ukrainian Electric Power Stations
(S. Prokopchuk; TRUD, 12 Jan 82) 1

Ekibastuz Construction Report
(V. Ovchinnikov; STROITEL'NAYA GAZETA, 22 Jan 82) 4

Lenenergo Operation Described
(A. Berezkin; VECHERNIY LENINGRAD, 6 Feb 82) 8

Baypazinskaya GES Turnkey Experiment
(A. Nemirovskiy; KOMMUNIST TADZHIKISTANA, 10 Feb 82) .. 10

Petropavlovsk TETs-2 Not Operating at Full Capacity
(A. Raysh; KAZAKHSTANSKAYA PRAVDA, 11 Feb 82).......... 14

Accelerated Completion of Power Projects Called For
(VYSHKA, 12 Feb 82) 19

Yermakovskaya GRES Power Output Lagging
(V. Stupak; KAZAKHSTANSKAYA PRAVDA, 13 Feb 82) 22

Unsatisfactory Production Figures Cited
(KAZAKHSTANSKAYA PRAVDA, 14 Feb 82) 26

Briefs

More on Kurpsayskaya GES 27
Transformer for the Kolymskaya GES 27
Geothermal Power Station in Stavropol' 28
Kiev TETs-6 Progress Report 28
Permskaya GRES Progress Report 28
More on the Permskaya GRES 28
Nurek Power Line 29
Power for West Siberia 29
LEP-1150 Ekibastuz to the Urals 29

FUELS

Deep Oil and Gas Drilling in Azerbaijan Outlined
(K. Kerimov; VYSHKA, 19 Feb 82) 30

Turkmen Gas Workers Continue Intensive Work
(S. Gochiyayev; SOVETSKAYA KIRGIZIYA, 24 Mar 82) 34

Reconstructed Baku Plant Produces More Oil Drilling Equipment
(O. Bagirov; TURKMENSKAYA ISKRA, 30 Mar 82) 36

Work of Turkmen Geologists Described
(M. Mirzakhanov; TURKMENSKAYA ISKRA, 4 Apr 82) 38

INFRASTRUCTURE REVIEW AT UKRAINIAN ELECTRIC POWER STATIONS

Moscow TRUD in Russian 12 Jan 82 p 2

/Article by S. Prokopchuk, PRAVDA correspondent: "The City Has Outgrown Its Cradle"/

> /Excerpt/ On 13 October 1979 the newspaper TRUD carried a report entitled "A City on Paper", which provided a criticism of the USSR Ministry of Power and Electrification for its neglect of social and services problems at the construction of the Rovenskaya and other atomic electric powerstations in the Ukraine. More than two years have passed since then. Has the ministry's attitude changed toward non-production construction work? Our correspondent visited the majority of the construction sites where atomic and hydroelectric power stations are being built in the Ukraine. This is what he reports.

I will say straight out: such volumes and rates of power industry construction work are unprecedented. Judge for yourself: at the present time in the Ukraine six atomic electric power stations are being built at the same time. In this five-year plan no less than 13 million kilowatts of capacities are to be brought on line; this has made it necessary to concentrate a large number of builders, installers and operators, as well as non-production workers, at these construction sites.

Since the beginning of the construction of atomic electric power stations, entire cities have come into being - more than 780,000 square meters of housing were made available within short periods of time, kindergarten facilities for 4,390 preschoolers, dining hall and restaurants for 4,000, public schools for 8,920 students. You will agree that this is quite a bit. But as it turns out, it has not been enough. There are many reasons for this.

First, the plan for the construction of housing and social and cultural facilities was not balanced with the growth in the numbers of personnel: funds were allocated for these purposes in amounts two to three times below the need. Second, the USSR Ministry of Power and

Electrification was not prepared for such a growth in the amounts of construction of housing and social and cultural facilities and did not create the construction base required for this.

They planned on mobile wooden housing units - the "hide and seek" game of power workers. But the UkSSR Council of Ministers and the Ukrainian Trade Union Council totally rejected the temperorary housing idea. Now the temporary social and cultural facilities and housing units are not actually being built at the construction sites of the atomic electric power stations. And there are a great many unresolved problems remaining.

While things are somewhat better at the Zaporozhskaya AES, at the Dnestrovskiy hydrosystem, the Chernobyl'skaya and Khmel'nitskaya AES's there is an acute problem. In Pripyat' 3,500 women must stay at home with their children when there is a critical shortage of workers at the construction site.

At the atomic power station construction sites of the Ukraine more than 17,000 families, half of which are living in others' apartments, are presently in need of housing. Things are especially bad at the Khmel'nitskaya AES, where more than 1,000 men are renting small rooms from landlords in nearby towns. Since transportation service is very poor, particularly in the winter, it is very difficult to get to work.

Only recently the managers of the USSR Ministry of Power and Electrification and the Central Committee of the Trade Union for the power workers were subjected to sharp criticism for their unsatisfactory attitude toward the housing and living needs of the atomic power station builders and toward their cultural and spiritual needs. Have they reached any conclusions from this criticism?

"Of course," I was told by the deputy minister of Power and Electrification, A. Semenov. "We plan to double the construction of housing at construction sites in the Ukraine and we are designing three new house building combines." Aleksandr Nikolayevich went on to describe a rather rosy future.

This could be entirely realistic, if the USSR Ministry of Power and Electrification had a slightly different attitude toward the realization of the decisions being made. There is every cause for such an opinion: in nine months of 1981 at AES settlements 43 percent of an annual assignment for housing was actually completed. Of nine childrens' institutions two were built. And of 20 cultural and services facilities only three were finished.

What is the primary reason for these and other problems in providing the power station builders with housing and kindergartens? It is primarily in the planning. Now the number of people living in these settlements considerably exceeds the planned population. For example, according to the design for the first section of the Rovenskaya AES, a settlement for 12,236 people was to be established, but already the population of Kuznetsovsk exceeds 25,000. This is responsible for the disproportions in the municipal, trade and services areas.

Could this growth have been predicted? Of course, if the estimates had been based upon the all-union average indicator with an adjustment for the growth coefficient: after all it is young people who are building the AES. The birthrate here is from three to five times greater than the average.

V. Kizyma, the chief of the administration for the constructtion of the Chernobyl'skaya AES, says, "Gosplan and the ministry must approve the design of the entire power station and be able to see the city following the construction of all AES power units, rather than "retuning" it with the completion of each section." In other words, they need to think of the future rather than just living today.

This is what happens when settlements are designed in stages. In erecting the first and second sections of the Chernobyl'skaya AES a Pioneer Camp for 640 children was built. They "found" a place for it and provided the appropriate boiler and installed the sewage and water system. Now the third section of the AES is under construction and a Pioneer Camp for 300 children is being built. Could they not have seen the need for a camp for 940 children from the beginning rather than building it in sections?

Another example. A Palace of Culture for 800 was built in Pripyat'. But the city has grown. This means that it is again necessary to spend millions of rubles to build a new palace of culture instead of adding 200,000 rubles at the beginning to build one such facility. By considering the number of residents of the city following the completion of all four sections of the AES this could have been avoided.

The collectives of the power station builders of the Ukraine are resolved to do everything possible to put the AES into operation as quickly as possible, but things could have proceeded much better if the USSR Ministry of Power and Electrification had intensively undertaken the construction of housing and social and cultural facilities. In order to achieve this it is time to undertake the creation of a construction base once and for all. Specialized plants are needed to manufacture and deliver prefabricated kindergartens, polyclinics, and homes for young families. It is this method of construction of housing and social and cultural facilities that is most rational and that guarantees success in the future. Such is the opinion of those who are now building the atomic power station cities in the Ukraine.

This opinion is shared in the USSR Ministry of Power and Electrification, which must now proceed to a more active and persistent fulfillment of what is planned. This is what the atomic power station builders of the Ukraine and the USSR expect.

8927
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ELECTRIC POWER

EKIBASTUZ CONSTRUCTION REPORT

Moscow STROITEL'NAYA GAZETA in Russian 22 Jan 82 p 2

[Article by V. Ovchinnikov, special correspondent: "Deliveries for the Ekibastuz Fuel and Power Complex"]

[Text] In order to develop the power machine building capacities, upon which hinges fulfillment of the 26th Party Congress and November (1981) Party Plenum task to accelerate the development of the Soviet Union's fuel and power complex, the labor collectives of nine ministries have agreed to a contract for labor cooperation.

On the one hand, the enterprises of the USSR Ministry of Power Machine Building have pledged to deliver equipment to all starting construction projects for various sectors of the national economy on time and ahead of schedule. On the other hand, four contractor ministries: the USSR Ministry of Power and Electrification, the USSR Ministry of Construction of Heavy Industry Enterprises, the USSR Ministry of Construction, and the USSR Ministry of Installation and Special Construction Work have decided to accelerate the construction of plants for the USSR Ministry of Power Machine Building. Finally, the labor collectives of the USSR Ministry of Ferrous Metallurgy, the USSR Ministry of the Machine Tool and Tool Building Industry, the USSR Ministry of Heavy and Transport Machine Building, and the USSR Ministry of the Electrical Equipment Industry have given their pledge to fill the orders of the USSR Ministry of Power Machine Building on a timely basis both for the output of power equipment and for the ministry's new construction projects.

One of the projects for which the Ministry of Power Machine Building is providing equipment is the GRES-1, which is being built within the Ekibastuz Fuel and Power Complex (ETEK). Using fuel from open-pit mines, it is planned to build five such power stations, the total rated capacity of which will be 20 million KW, near Ekibastuz. This is almost the equivalent of 40 Dnepr River hydroelectric power stations!

How is the "contract of the nine" coming along here?

In April 1980 the first of eight power units at the station provided current. Last year the fourth unit was put into operation. Each of the units has a rated capacity of 500,000 KW.

Still the project is lagging behind the assigned pace of work. What is more the first three power units are not performing well: downtime as the result of emergency shutdowns amounts to almost 6,000 hours.

According to specialists, one of the major reasons for the shutdowns is that the power units were put into operation before work on them was complete. For example, the floor cleaning device (and this in a GRES with comprehensive automation and delicate instruments!) and the waterproofing of the roof and the electrical facilities of the fuel feed tunnel were not completed. (There were instances when rain penetrated through holes in the roof and soaked equipment that was being installed. As a result the equipment malfunctioned.)

The power station operating personnel are also to blame for the emergency situations. The power workers sometimes acted simply as if they did not know what they were doing by forcing the equipment to operate in a mode for which it was not designed. In order to take care of things that had not been finished and to eliminate the consequences of emergencies, they had to take builders and installers away from work on the other power units, which resulted in lost time.

The reasons for the difficult situation can be traced to when they were giving preferential attention to the construction of the industrial portion of the ETEK. In so doing they lost a strategically important point in their work and failed to develop a housing construction base on a timely basis in Ekibastuz. They also failed to build housing units at a rapid rate. Today at the construction site and within the staff of the GRES there is a shortage of skilled specialists. And because there is no housing, it is impossible to invite them to come to Ekibastuz. There isn't even any space in the dormitories, which house workers on temporary duty.

In such conditions even today the collectives of the machine building enterprises of the nation who supply equipment could do a lot to help the construction site. Primarily by manufacturing equipment without defects.

In order to better describe what is expected of the plants which supply equipment, the installers and power workers themselves discuss what is going on.

A. Kozhin, technician from the Sibenergomontazh trust: "Unfortunately, at the association 'Leningrad Metal Plant' the turbines are not subjected to stand testing prior to being shipped, As a result, for example, the rings of the high pressure cylinders that were delivered to us had to be welded on one side on the circumference by several millimeters and on the other side we had to bore the entire circumference."

V. Yanovich, chief of the GRES-1 equipment department: "All deadlines for shipping the TRN-500 transformers were disrupted by the Zaporozh'ye Transformer Plant. The Uzlovskiy Machine Building Plant (Tula Oblast) is not supplying bridge cranes on time. The Belgorod Boiler and Mechanical Equipment Plant of the USSR Ministry of Power Machine Building is delaying the shipment of high-pressure pipelines and other product."

V. Novikov, chief of the Ekibastuz Administration of the Sredazenergomontazh Trust: "The Belgorod suppliers are constantly disregarding the technical specifications for the shipping of equipment: instead of shipping installation units they are shipping them 'in pieces'. The plant is not welding the pipelines and the parts of the suspensions are arriving in boxes in bulk."

The installers are wasting a lot of time installing electric motors from the Yerevan plant. In these motors the wiring is poorly secured and we must reshape the stator; in addition the cable splicing is poor and the quality of the insulating material is poor.

In October the Minister of Power Machine Building V. Krotov, the directors, chief engineers, foremen and brigade leaders from enterprises of the Ministry of Power Machine Building visited Ekibastuz. What did this trip provide?

I can judge the positive results of this trip because I saw and learned for myself by visiting the Podol'sk Machine Building Plant imeni Ordzhonikidze, which supplies boilers to Ekibastuz.

The unit assembly shop. A transparency hangs above a span: "A green light to the orders for the Ekibastuzskaya GRES". In the shop I was introduced to the leader of the brigade of welders, V. Tenorov, who said: "I came to Ekibastuz with a group of workers from the plant to help speed up the welding of the leaks in the equipment of the second power unit and to weld the seams to prevent further leaks. We are always trying to do our best on behalf of our plant's trademark and we are proud that our product is praised for its high quality. For this reason is was particularly painful for us to see that some of the contact welded seams at the Ekibastuzskaya GRES, which we had done in our shop, had not withstood the increased loads. We had something we could refer to and vindicate ourselves. But this was not enough to do and we assured our comrades that we would convey to our comrades the favor that they raise the quality of the welding. And this I did when I returned to the plant. The work shops listened to me carefully and understood me correctly."

At the plant it was decided to speed up the execution of measures to increase the reliability of the contact welding. In particular, to speed up the development along with the scientific research institutes of new methods for monitoring the work mode of the welding equipment and an essentially new flaw detection system of the joints.

Nowhere in the world has a reliable method for the nondestructive monitoring of the quality of joints for this type of welding been found. For the time being in the shop where the steam heat exchanger, which provides a lot of problems due to leaks, they have introduced a color flaw detection system and an x-ray unit; they also use ultrasound systems.

Unfortunately, the problem concerning the stand testing of Leningrad turbines is still not solved. Last November I learned from the chief engineer of the Main Technical Administration of the USSR Ministry of Power Machine Building, Yu. Timofeyev, that the technical specifications for the necessary stand testing of the "500" transformer, which is manufactured by the Leningrad Metal Plant, had finally been signed. The Leningrad workers are preparing their test stand for this and the Ministry of Power Machine Building is building another one with its own resources. I recently called Leningrad.

The chief engineer of the association, A. Ogurtsov, answered that "the problem on stand testing still has not been solved. Two ministries are working on the problem, but it is a complicated matter and it has been pushed aside."

The cooperation of the machine builders, the builders and the power workers must be strengthened - this is the guarantee of the successful creation of the power portion of the ETEK. Its forms must be improved. And primarily it is necessary to strengthen the cooperation at the level of the ministries and enterprises through the personal contacts between the collectives of workers. In other words, the "workers' relay race" must be made truly at the worker level.

And the agreements between the enterprises are still too general in nature. I recall how surprised the power station's party office was when the Leningrad Elektrosila Plant refused to sign a "workers' relay race" contract. The problem was the contract was drawn up in too general terms, as a carbon copy, as they say. Moreover, in the traditions of the Leningrad workers to approach a competition with a business-like attitude and not to throw promises around. And so at the Elektrosila Plant they insisted that the contract be changed and to establish what and within what time periods was to be manufactured. The power workers were not prepared to specify the pledges.

It is thought that a good lesson is to be found in the "contract of the nine" for the organizers of the competition on the principle of the "workers' relay race".

8927
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ELECTRIC POWER

LENENERGO OPERATION DESCRIBED

Leningrad VECHERNIY LENINGRAD in Russian 6 Feb 82 p 1

[Article by A. Berezkin: "These 'Seventeen Moments'"]

[Text] Today there are very few people in the ancient building in Marsovoye Field. For the majority of the workers of the Lenenergo administration Saturday is a day-off. As I proceed to the main dispatch control panel, my steps echo in the corridors with the high arches.

And here work never ceases. Not at night, not during the day, not on holidays, and not work days..

As everyone knows electricity cannot be stored for future use. It must be obtained in the amount required by consumers at any given moment. The dynamic balance between generation and consumption is maintained by the dispatchers.

The Soviet Union's unified power system can be compared with a living organism, all parts of which function in total synchronization. The hundreds of generators not only produce current of the same frequency of 50 Hz, but even their revolving is in phase. In Moscow in the central dispatch directorate they keep watch over this unified frequency throughout the entire system. Entire electric power stations of the Volga River cascade serve as the regulators. At the control panel of Lenenergo this task is taken care of on a local scale. In addition, the dispatchers keep an eye on the excess power produced here that is then transferred to the Center.

The main dispatch control panel is located in a large machine room of an odd shape. One of its walls is in the shape of a semicircle. It completely is taken up by a diagram of the Leningrad power system. It has been installed as a concave tableau and therefore reminds one of a wide-screen movie theater.

The senior dispatcher, A. F. Mikheyev, says, "Truly, just like at the movies, this wall reflects the life of our city. It is a unique film!. The hertz and kilowatts are the decorative fixtures on the screen."

To tell the truth I have a hard time understanding their language. But Anatoliy Fedorovich easily explains the various nuances of the power "subject matter".

He says, "It can be shown that a Saturday in the power system is sort of a day-off: the large industrial enterprises are not operating and they are the main consumers of electricity. But this is not the case. It is on such days that the greatest power loads are put on us, the dispatchers."

On the diagram the first-born of GOELRO, the Volkhovskaya GES, the Leningrad atomic electric power station, a TETs, the Krasnyy Oktyabor' veteran, and the powerful heat and power "plants" - the Northern and Souther - are lit up. Altogether there are 22 power stations. It is most convenient to repair the high-voltage equipment on days off, since it cannot be done with shutting it down. This is why the load on the dispatchers is greater on such days.

But this is not the only sign of Saturday. If a dispatcher opens a newspaper before going on duty, he first of all takes a look at the weather forecast and television programming. But this does not mean that he is worried about a fishing trip or a television program that he will miss. He has another concern in mind. A rise or fall in the temperature leads to a change in the consumption of electricity by as mucb as 20 MW. And the popularity of the television program "Seventeen Moments of Spring" has again and again been confirmed by an increase in the power load of the system.

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BAYPAZINSKAYA GES TURNKEY EXPERIMENT

Dushanbe KOMMUNIST TADZHIKISTANA in Russian 10 Feb 82 p 1

/Article by A. Nemirovskiy, TadzhikTA reviewer: "The Baypazinskiy Experiment: GES Being Constructed as 'Turnkey'"7

> /Excerpt7 The task for the radical improvement in capital construction was put forward by the 26th Party Congress. It is now being successfully solved in the construction of the Baypazinskaya GES, where the work is being done by subelements of Nurekgesstroy /Nurek hydroelectric power station construction trust7. The annual program was completed within ten months here. And this was no accident. At the site of the project in Baypaz they are developing a capital construction strategy and tactics in conditions of a new economic mechanism.

1. Excavators on the bottom of the Vakhsh River

A river without a shoreline - such is the short stretch of the Vaksh River where the basic facilities of the Baypazinskaya GES are being built. The wall of a cliff rises from the water along the right side with the current of the river - and this is where they are to build the hydroelectric power station!

The first thing that had to be done was to put in bridges from the left shoreline. The idea was to open traffic along the crest of the Baypazinskaya hydrosystem's spillway which intersects the Vakhsh River. But this was how equipment weighing 60 tons could be started. But what about the excavators which "haul" as much as 200 tons?

In the technical department of Nurekgesstroy I was told during a recounting of discussions on this problem that, "it was decided to secure the spans of the dam with metal structures. Just imagine how much time it would have taken to do this: acquire the metal, find a plant which manufactures the structures, have them delivered and begin the installation...the Gordian knot of all these problems was cut by the sword of a precise engineering estimate - the structures were secured by reinforced concrete slabs that we manufactured ourselves."

Let us drop the technical aspect of this matter, which is rather complicated, and proceed to the moral aspect. According to a long tradition, which is severe and just, the engineer who estimates the spans must stand beneath the bridge when the first traffic travels over the bridge. If it holds everything is okay; but if not the span itself passes judgement on the enginner. This custom has long been abandoned but a mistake is fully paid for even today. To the honor of the Nurek engineers, they did not avoid this problem, but assumed full responsibility for it - and they came out the winners! The road on the right shoreline was opened a full year ahead of schedule and work got underway ahead of schedule. A tidy sum of money was put aside from the assets that were saved.

And one other problem exists. During the years that the Baypazinskaya hydrosystem has been in operation, the Vakhsh River has turned back from the dam approximately 500,000 cubic meters of alluvium. According to the construction conditions of the Baypazinskaya GES, some of the alluvium was to be removed and the remainder to be pressed as rock. The designers proscribed: to install a floating hydraulic dredge which would pump off the alluviwm and pour off the rock from a self-unloading barge.

Money and time are needed to create and acquire such equipment - again the problem of time! At Baypaz they came up with a different decision: using the special characteristics of the terrain they emptied the coffer of the dam on the Vakhsh River and then on the dried river bottom they brought in the excavators, which are now removing a layer of the alluvium. The river channel at this location is now dry and "paved". It is important that the coffer is now being used as one more transport crossing. This has speeded up and lowered the cost of work at several facilities.

2. Payoff on the road

This is one of the greatest advantages in Baypaz - more than 800,000 rubles saved in the construction of a road from Nurek, where the base of the power station builders is located, to the area where the GES is being built. This is the total amount of money saved from cutting back in the use of metal, cement, and other materials and labor expenditures. The design was attractive in its own way - the road was to be laid along the steep mass along the brow above the Vakhsh River and the precipitous shoreline was to be reinforced with bulkheads. The units were to poured at a reinforced concrete structures plant, and then installed in place using the equipment.

The builders again decided to do things differently - they cut into the cliffs, having pushed aside the road foundation from the untrue shoreline. It is true that this resulted in a great deal more earthmoving work, but this - and this was the essence of the concept - was much cheaper than securing the shoreline with costly facilities.

In designing and adapting any facility to the local terrain, the designers therein determine also the nature of the organization of labor. This is not always the strongest part of a design because in large construction organizations, which are in charge of several construction projects, the situation changes dynamically and new opportunities arise. For this there are operational planning and management. The idea to chisel a road bed in the cliffs not only came into being as a beaütiful engineering idea but because it was possible and necessary to use the excavators that were no longer needed on other sections by this time. To put it in common words, an already-formed reserve of capacities was introduced into the matter.

3. The position of engineer

Our society values the labor and talent of people. The specialists connected with the Baypazinskaya construction undertaking have deservedly received awards for the suggestions that have been adopted. But the idea to radically change the construction of the local road from Nurek to Baypaz was not formulated as an order for a rationalization proposal. A feeling of deep satisfaction for the engineering concept that was used far exceeded any bonuses!

The realization of the engineering solutions was full of drama. From a multitude of collisions that are connected with this - duty, technical, and social - it is sufficient to point out one, which was hardly the most significant. Sometimes it is necessary to reject a rational concept because it might be detrimental to the economic well-being of the construction organization. The principle of the greater the expenses for a construction project the higher the deductions from salary are was once in effect and in some places this is still true. In its time this was of importance. Due to this principle they were able, in particular, to create a powerful construction base having extensive opportunities to solve present large-scale tasks. Now the time has come - and the 26th Party Congress pointed this out in very direct terms - to use the experience that has been accumulated. The Baypazinskaya GES is being built on this basis: the greater savings against the projected cost of a construction project that are made, the more money is entered into the account of the construction organization.

In these conditions, there is a lot of room for engineering activity and for seeking economically rational technical solutions.

4. Target - a year ahead of schedule

S. N. Niyazov, the manager of the Tadzhikgidroenergostroy /Tajik hydroelectric power station construction trust/ trust, has this to say about the situation at the construction site: "Due to the original engineering solutions during the first year of work at the Baypazinskaya GES significant amounts of money were saved."

"But this does not mean in any way that we have already put this money in our pockets. The simple rules of arithmetic do not always apply in economics. The true effect will provide only a final result - the early completion of new electric power capacities.

"The saved funds are being spent for the construction of facilities not called for in the design, which will make it possible to begin generating electricity at the station a year ahead of schedule. Here is an especially clear example," continued S. N. Niyazov. "According to the classic diagram for the construction of a hydroelectric station, first we should have drilled a tunnel and ran the water of the Vakhsh River through it and then on the dry section erected the building of the GES. We would have been able to commence this work only at the end of this year. Instead of this we at our own expense built a concrete wall having shut off a small area from the riverbed of the Vakhsh River, where even now we are digging the trench for the GES building. At the end of summer we will begin pouring concrete beneath the GES power units. Now the future for the installation of the two first power units of the Baypazinskaya GES will be in 1983; and this goal is entirely realistic. If it can be expressed in this way, this is the essence of our strategic goal. And the income will come from the electricity that is produced for the national economy rather than from the savings in construction. According to the conditions for the construction of the GES, we ourselves will exploit it until the full handover to the customer as a "turn key", while receiving the profit from this."

"The Baypazinskaya GES is the Soviet Union's first very large construction project being built on a "turnkey" basis. This is no simple matter: to introduce the construction project through the use of bank credit, to remain within the estimate and to still receive a profit. I repeat that we are the first. We are obliged to cope with the assignment, which is opening up new paths in capital construction.

8927
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ELECTRIC POWER

PETROPAVLOVSK TETS-2 NOT OPERATING AT FULL CAPACITY

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 11 Feb 82 p 2

/Article by A. Raysh, correspondent to the newspaper KAZAKHSTANSKAYA PRAVDA, Northern Kazakhstanskaya Oblast: "Power Industry Reserves into Action: In the Reflections of Past Glory"7

> /Text7 At the Petropavlovskaya TETs-2 production capabilities are being poorly used.

For many years the collective of the Petropavlovskaya TETs-2 was discussed with pride at meetings and used as an example for others to follow. The majority of Petropavlovsk's enterprises was found in the front ranks. Praise for this power plant went well beyond the borders of Northern Kazakhstan. The veterans of the enterprise - the foreman of the boiler shop Viktor Aleksandrovich Fedorov, the shift chief of the power station Boris Mikhaylovich Tyumentsev - have pleasant memories about the former labor successes. They themselves were present at a solemn ceremony in putting the collective in the position of having earned the right to permanently hold the Red Banner award of the Kazakhstan Oblast Party Committee, the Oblast Executive Committee, the Oblast Trade Union Council, and the Komsomol Oblast Party Committee. Their collective has also received other awards. Now these awards stand in the Party Committee as relics of the past labor glory of the collective.

But since the mid-1970's there has been a drop in the production of electricity. We were given a note in the planning department which contained the following: "in 1976 the power station produced 2.977 billion kilowatt-hours; in 1977 - 2.776 billion; in 1978 - 2.740 billion; in 1979 2.696 billion; and in 1980 - 2.576 billion kilowatt-hours." This process did not come to an end last year either when the power station produced two billion two hundred fifteen million kilowatt-hours, which is 12 percent below the planned amount. The Petropavlovsk power workers must receive their due. They are trying to keep the curve of the production schedule from dropping further. They have had some success. With great difficulty the collective managed to meet the January plan for the production of electricity. This gives rise to the hope that there is an end in sight for the declining output.

However, to do this they must overcome the barrier of poor organization and improve the labor discipline at the enterprise. In order to bring the TETs-2 up to planned capacity, the existing 12 boilers must be put into operation. It is true that two of these boilers were disassembled because they were worn out and outmoded. But throughout the summer of last year no real efforts were made to prepare the remaining boilers at the TETs-2. Since 15 March 1981 they have started to repair the planned five boilers and by the planned time period - the middle of November - they had put only three of them into operation. The time period for preparing the remaining two boilers has been postponed. But the boilers were not repaired during the period of the postponement. As a result the power station did not receive the documentation that states that it is ready for taking on power loads.

This year a new boiler was to have been installed.at the TETs-2. On the fifth of January the USSR Ministry of Power and Electrification issued an order stating that the time period for the introduction of this boiler No 6 was to be 30 November. One hundred thousand rubles were allocated for this. But the installation cost is 1,230,000 rubles. This is why the Petropavlovsk workers are wary of this very needed construction undertaking. For now they are only talking about it. But both the construction workers and the installation workers must demonstrate the maximum amount of discipline and degree of organization, without resorting to objective reasons and excuses.

Analysis suggests that the repair work program for the current year not only has not been reduced but has increased due to the number of tasks that did not get done in the past. The power workers must complete the capital repair of the third and fifth boiler units, the fifth and seventh turbines. These are very serious tasks. And how have the power station's engineering and technical workers prepared for this? We state directly that they and the managers have done an unsatisfactory job.

As before the repair work is not on schedule. The managers of the TETs-2 jointly assert that they do not have enough people. Not only do they not have enough skilled workers with right of entry documents but there is also a general shortage of installers. Why is this? There is a large turnover of labor. People cannot be kept here in one place for long. Let us take, as an example, the installation brigade for surface heating which is led by an experienced organizer, Ye. A. Stepanenko. Even his collective is made up of 50 percent new people during the year 1981, not to mention the other brigades.

For the sake of fairness it must be said that the power station does have a solid basic skeleton of a collective. The majority of the power workers labor diligently and conscientiously. We were given the opportunity over an extended period of time to observe how well the brigade of Petr Aleksandrovich Pyatkov worked on boiler No 8. Both the welders and the installers worked well together. Then, during a break, they talked freely about the advantages of the unified contract method that has been adopted here. Welder A. P. Leont'yev, a labor veteran, joined in the conversation.

Aleksandr Petrovich said, "You know I have been working here since the power station was put into operation. That is more than 20 years. And when we first switched to working on the unified order with pay by the coefficient of labor expenditures each of us understood that this was a necessary thing. And all of us began working diligently."

In specific examples one can become convinced that due to the adoption of progressive forms of labor organization a stable, capable collective has evolved. The collective itself decided to put the boiler No 8 into operation ahead of schedule. In this manner the possibility to generalize and adopt this progressive experience was at hand. At this point the economic managers, the party, plant and Komsomol committees must speak their piece. Based upon this experience, they were required to strengthen labor discipline within the collectives of the power station, to bring organizational and mass-political work to the needed level, to establish strict control over the fulfillment of pledges, and to activate the socialist competition.

At one of the technical meetings the TETs specialists had a serious conversation about the amounts of capital and medium repairs on the boiler units for the year. They then scheduled every detail as to what and when it was to be done. But the problem was that the estimates were not supported by material capabilities. At this enterprise the poor provision of the power station with everything that it needs is quite evident. There is a shortage of spare parts for both the primary and the auxiliary equipment. And, finally, the managers of the Kazakh SSR Ministry of Power and Electrification must respond.

Vladimir Ivanovich Ukhabov, chief engineer of the TETs-2, says, "the Barnaul Boiler Plant deserves serious reproach. This enterprise provides us with a screened system of pipes that are a millimeter smaller than those we have on the boilers produced by the Taganrog "Red Boiler" Plant. As a result the screening system is frequently disrupted. On some boilers we have replaced as much as 50 percent of such pipes. The normal service life of these pipes is 150,000 hours, but those that we have are lasting only about half that amount. Another reason for the rapid wear of the equipment is that the coal that we receive from Ekibastuz has an ash content of 42 to 47 percent instead of the estimated content of not more than 35 percent."

The capital and medium repairs to the thermomechanical equipment of the power station are performed by the contract method, which is performed by the Petropavlovsk sector of the production-repair enterprise Tselinenergoremont. According to the contractor, the Kazakh SSR Ministry of Power and Electrification is doing a poor job of supplying the contractor organization with the needed amount of pipes and metal. This is having a negative impact upon the fulfillment of the needed amounts of repair. Frequently the boilers are idle for 60 to 80 days in excess of the norms.

The power station's water supply system is an important and pressing problem. When the TETs was put into operation in 1961, the salt content of the water in Beloye Lake was 320 milligrams per kilogram of water. Now this figure has increased to 1,200. This also speeds up the wear of the equipment significantly. It is planned to construct a second pumping station which will provide fresh water. But, is it not peculiar, that the TETs-2's own construction administration is working very slowly on this needed section.

In speaking about the problems of increasing the output of electricity at the TETs-2, especially during the fall and winter of 1981 - 1982, we cannot fail to mention the problem of how electricity is used in the national economy of the oblast.

As we have already been convinced the Petropavlovsk power workers are having a very hard time in producing electricity. The fact that some consumers have a lackadaisical and wasteful attitude toward electricity causes some bewilderment.

As soon as the frosts came and the temperature fell below 20 degrees C in our oblast, the expenditure of power, especially by the sovkhozes and kolkhozes, increased 3-fold. Much power is wasted on superfluous heating. On the farm in the village of Bekseit in Mamlyutskiy Rayon, for example, water for livestock is heated in a tank that is not insulated and that does not even have a lid. The doors of the facility are not closed. Dozens of unneeded lights and heaters are permitted to burn. At the Aleksandrovskiy sovkhoz in Vozvyshenskiy Rayon the pig sties are not insulated and only electric heaters maintain the high temperature. At farms of the central grounds of the Petropavlovskiy Sovkhoz the majority of the windows do not have glass and the window openings are filled with hay. The electric heaters are left running 24 hours at a time.

In a word, the situation is similar to the saying, "sometimes there is lot, sometimes little and sometimes nothing at all." The extreme consumption of electricity in one place leads to a sharp shortage in another. Sometimes, the TETs-2 simply shuts off some consumers. This seriously affects the rhythm of the farms. For example, the director of the oblast association Sel'khozenergiya, P. S. Popov, with alarm described cases where the electricity had been shut off. Just in January the Tselinnyy Rayon was undersupplied by thousands of kilowatt-hours of electricity. As a consequence of this at farms of the Michurinskiy, Leninskiy, and Belogradovskiy sovkhozes did not have electricity for nearly 10 hours. Because of this cows were not milked on time and the feed shops were shut down. It is not difficult to estimate the losses that were incurred for this reason.

The Communist Party and the Soviet government are directing the workers of all sectors of the economy to conserve fuel and power resources. At the November (1981) Party Plenum of the CPSU Central Committee the importance of developing the fuel and power complex and the need to rapidly adopt energy conserving equipment and technology was emphasized.

The Northern Kazakhstan Oblast has long ago become an oblast of dense electrification. There is no branch of industry, village or construction site where the need for electric power does not increase daily. From this stems the primary task of the collective of the Petropavlovskaya TETs-2 - to strengthen its struggle to increase the efficiency of its own production and to use all reserves for successfully fulfilling the plans for the generation of electric power. The task of the consumers is to strictly monitor the use of electricity and to have a thrifty and proper attitude towards it.

8927
CSO: 1822/116

ELECTRIC POWER

ACCELERATED COMPLETION OF POWER PROJECTS CALLED FOR

Baku VYSHKA in Russian 12 Feb 82 p 1

[Article: "Accelerate the Introduction of Power Industry Projects"]

> [Text] A new high-voltage electric power transmission line of a length of 300 kilometers and a substation have joined Ali-Bayramlinskaya GRES imeni Il'ich with the Dagestan ASSR. These projects will increase the reliability of the power supply to several regions of the Azerbaijan SSR and the neighboring autonomous republic.

This report from the correspondent of the newspaper VYSHKA is one of many covering the construction of power industry projects, which, as determined by the 26th Party Congress, are among the base sectors of industry.

As the population and the number of industrial production facilities rise so also increases the expenditure of electric power. At the 30th Azerbaijan SSR Party Congress it was noted that the development of the electric power industry is still lagging behind the increased needs of the Azerbaijan SSR's national economy; this is evident in the fact that the production of electricity is two billion kilowatt-hours below what is needed. This shortfall is being augmented by the transfer of electricity from the unified Caucasus power system.

Last year they managed to accomplish quite a bit in this direction in order to fulfill the decisions of the 30th Azerbaijan SSR Party Congress. Azerglavenergo successfully dealt with the indicators which describe capital construction: the capital construction plan was fulfilled by 122.5 percent, the construction and installation plan by 104 percent, and the plan for the introduction of fixed assets by 106.6 percent.

Included in the introduced projects were the power transmission lines with a total length of nearly 2,000 kilometers, 383,200 kilovolt-amperes of transformer capacities. Much was done to improve the living and housing conditions and the working and relaxation conditions of the workers and their families. At the Azerbaydzhanskaya GRES, the Shamkhorskaya GES, in Khachmas, Ali-Bayramlý and Masallý nearly 1,000 apartments were occupied; and in Baku the first section of a dispensary was completed.

Of course, the kindest words must be said about the participants in the construction of the Azerbaydzhanskaya GRES. Their diligent work was crowned with a tremendous labor victory: the first 300,000 KW power unit was put into operation ahead of schedule. The economic significance of this fact can be evaluated in this manner. Now the first unit is generating more than five million kilowatt-hours of electricity every 24 hours, which is more than the 24-hour output of the Mingechaurskaya GES imeni Lenin. Due to the efforts of the power station operators, who have pledged to put the power unit at planned capacity ahead of schedule, its contribution to increasing the republic's power resources will increase.

In providing the high rates of construction of the Azerbaydzhanskaya GRES and the reliable operation of the existing power unit, there is no doubt but that a positive role is being played by the organizational and educational work performed by the Mingechaur City Party Committee, which has organized a regularly operating headquarters for monitoring the construction, introduction and assimilation of capacities. The daily attention shown by the party organization toward the everyday needs of the builders and power station operators, their cultural services, ideological and political growth, and the organization of an effective socialist competition, is making it possible to place responsible tasks before the general contracting and subcontracting organizations and to achieve their successful fulfillment.

In the area of power industry construction and increasing the power resources much remains to be done in the 11th Five-Year Plan. In particular, it is planned to ensure the accelerated construction and ahead-of-schedule completion of the Azerbaydzhanskaya GRES and the Shamkhorskaya GES with a total rated capacity of 1,580,000 kilowatts. Another 75,000 kilowatts will be added by increasing the capacity of the Mingechaurskaya GES imeni V. I. Lenin. New substations in Sangachaly, a power transmission line between Ararat and Babek, and other projects will also be built. The output of electric power will be increased by no less than 1.3-fold. The Azerbaijan SSR has never known such a large increase in the capacity within a single five-year plan and such a rapid growth in the amount of electricity produced.

It is quite clear that the fulfillment of this important program depends primarily upon the rates of capital construction, the very precise organization of the construction work, the use of industrial methods, the complete concentration of workers and resources, and the clear setting in motion of the planned complexes.

A special feature of the 11th Five-Year Plan in the area of power industry construction is that new capacities will be put into operation in each year of the plan. Last year marked the beginning of this effort; and this year the socialist pledges call for the second power unit of the Azerbaydzhanskaya GRES and the first hydrounit of the Shamkhorskaya GES to be put into operation two months ahead of schedule. It is a matter of honor to the general contracting organization of the Azenergostroy trust and its main subcontractors, subelements of the Kavkazenergomontazh trust, to successfully cope with these pledges.

Experience shows that it is very important to maintain high rates from the very first weeks of a new year. Unfortunately, at times the efforts of the builders are wasted due to misunderstandings in planning and disruptions in the delivery of equipment, machines and materials. Already these misunderstandings have begun to slow down the pace of work at the Shamkhorskaya GES. At this project they are short two gantry cranes, which must be assembled before filling the reservoir. Time is running out and the customer, the directors the the GES, still have not made a final decision regarding the delivery of the cranes or of the generators from the Novosibirsk Energotyazhmash Plant.

The customer, the board of directors of the Azerbaydzhanskaya GRES, is also to blame for delaying the effort to accelerate the pace of work. As long ago as last year the foundations for the boiler of the second power unit were ready. But as of now the there is no casing, although the boiler units are already coming in from Taganrog.

Dozens of subcontractors and materials and equipment suppliers participate in the construction of each project. The comprehensive socialist competition on the "workers' relay race" principle plays an important role in combining their efforts. In his greeting to the participants in the construction and assimilation of the new complex for the refining of oil in the refineries of Azerbaijan, Comrade L. I. Brezhnev noted that a decisive factor in the achieved successes has been the close cooperation of the collectives of builders, installers, designers and power station operators. Positive experience has been accumulated in this area in Mingechaur. This experience must be used immediately by those participating in the construction of the Shamkhorskaya GES and the Azerbaydzhanskaya GRES. The board of directors of the latter would find it useful to implement the "workers' relay race" principle in acquiring a new supplier for the casing from Rostovskaya Oblast.

Much remains to be done by the Shamkhorskiy Rayon Party Committee. It is necessary to speed up the organization of a headquarters for the construction and to increase its attention to the daily progress of the construction, the organization of the socialist competition, and the creation of conditions for the workers to do highly productive labor.

All collectives of builders, installers, and power station operators - the initiators of the competition to introduce the power industry projects as quickly as possible need to be deeply aware of their responsibility for their fate. All reserves must be used to pick up the pace of work and to improve quality so that all planned capacities can be put into operation within the indicated time period as called for in their pledges.

8927
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YERMAKOVSKAYA GRES POWER OUTPUT LAGGING

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 13 Feb 82 p 2

/Article by V. Stupak, correspondent for the newspaper KAZAKHSTANSKAYA PRAVDA: "Power Industry Reservies into Action: If the Flagship Has Lagged Behind"/

> /Text/ Relatively recently, four to five years ago, the flagship of the Kazakh SSR's power industry - the Yermakovskaya GRES - achieved an annual output of electricity of 17 billion kilowatt-hours. But in the past heating season the power station generated only 14.4 billion kilowatt-hours of electricity for the network; and its economic and technical indicators can only be viewed as negative, if used as an example. With an established rated capacity of 2.4 billion kW the GRES is maintaining a load of only 2.1 to 1.9 billion kW. What has happened with this giant of the thermal power industry?

The office walls of the GRES director are covered with diagrams of indicators for the past ten years: the electric power outputs, the expenditure of fuel, the number of emergency shutdowns, the production costs of a single kilowatt-hour, and the ash content of the coal, etc. Previously the director would lead the correspondent to these impressive line diagrams and explain the situation. Today Aleksandr Vasil'yevich Panasenko did not even glance at the walls.

"The basic reasons for what has happened must be sought in Ekibastuz not in Yermak," he said with great importance. Getting up from his desk he invited us to the front corner of the office. There on the parquet floor was an unsightly heavy iron junk: the broken pieces of some sort of machinery; the 150-kilogram tooth of an excavator, which resembled the tusk of a mammoth; a pile of rail washers; and a heap of steel bearings.

The director lifted one of these pieces weighing 4 to 5 kilograms in his hand and explained:

"The coal suppliers are destroying our mills with these things. No machine is able to withstand or regrind such 'raw material' without breaking. No super magnets are capable of protecting the machinery from this junk since the rotor parts are manufactured out of manganese steel."

This is one of the reasons for the emergency shutdowns. It is far from being the primary reason, but it attests to the fact that the miners have started processing the heavier rocks (where the teeth are broken on the excavators) and delivering high-ash content coal, which requires more powerful and strong grinders. It turned out that the power workers were not ready for this.

We are not speaking only of the grinders. All of the equipment that is used in the processing and burning of coal with an increased ash content is subjected to heavy wear and tear. This requires more frequent replacement and the rebuilding of many units. However, the electrical equipment industry has not increased its capacities and has begun delivering less that it did before.

Thus the Barnaul Sibenergomash /Siberian power machine building/ Plant is not even supplying half of the exhaust fans, ventilators and spare parts for them that it should. The Baranovich plant is not providing the planned serrated sleeves, casings, exhaust fan blades - altogether more than a dozen different pieces of equipment. The Proletarskiy Plant in Leningrad is not filling orders for spare parts for the turbofeed pumps. And papers signed by the managers of the Kazakh SSR and the USSR ministries of power and electrification, the resolutions made by the managers of the machine building departments are not helping to solve the problems. How can a power unit function without the turbofeed pump? This leads to the loss of 100, 000 KW within the power system.

Previously the operation of the Yermakovskaya GRES was often compared with the Reftinskaya GRES in the Urals, which has similar equipment. Also burning Ekibastuz coal, the Reftinskaya GRES, however, continues to operate on a stable basis. Why the difference?

"Near REfta there is a powerful industrial base, the large machine building enterprises of Sverdlovsk, which help the power station with castings and the manufacture of spare parts," explains the deputy chief engineer, Igor' Alekseyevich Yakubenko. "But we still are unable to cast or manufacture even the simplest parts at the plants of the Kazakh SSR.. Only now with the help of the party organs have we reached an agreement that the Yermakovskiy Ferroalloy Plant, the Karagandinskiy Metallurgical Combine, and the Pavlodarskiy aluminum and tractor plants will begin filling our most urgent orders."

There are many technical difficulties, problems and snafus at the Yermakovskaya GRES. Still, if one investigates more deeply one can see that these are not the main reason for the unreliable operation of the flagship. It is no accident that the power station director came up with the retort that the causes of the problems need to be looked for in Ekibastuz rather than in Yermak. There is some truth in this.

The worsening of the Yermak power station's operation began with the start up of the first power units in Ekibastuz. This came as no surprise because it was the Yermakov workers who were largely responsible for "untwisting" the new GRES. Every year nearly one fourth of the collective continues to leave for Ekibastuz. Moreover, as a rule, it is the more experienced engineers and skilled workers who are leaving. Things have gotten so bad in Yermak that the senior machinists are on watch only for two shifts rather than three as required.

The transfer of the thermal equipment installers to Ekibastuz was particularly harmful to the reliability of the electric power station, because these are the most highly skilled specialists on boilers and turbines. Previously they performed nearly 270,000 to 320,000 rubles worth of capital construction work here each year; but last year they barely managed to assimilate 30,000 rubles.

If one also takes into consideration that the Sevkazenergoremont is understaffed by almost 260 men at the Yermakov subelement, then it becomes clear why emergency shutdowns have become so commonplace at the flagship, why equipment is malfunctioning, and why there is only a partial power load on the station. This leads to a very dangerous situation for the power indsutry: the machinery is taken down for repair and preventive maintenance as needed rather than in accordance with a schedule, and usually only the face of a threatening emergency. Units and parts are replaced only partially rather than completely. In a word, why worry about luxuries, when we have all we can do to just keep alive.

For example, power unit No 6 should have been shut down last year for mid-service life repair, but since the repair work on power units No 2 and No 5 had taken so long (they were short one third of the repairmen), this was not done. The power unit went into the winter season unprepared. Shutdowns are particularly frequent due to the lated repairs to boilers.

Now the situation with the postponement of preventive maintenance and repairs is getting worse and becoming imbedded, so to speak, from the top on down. In particular, there are more frequent telephone calls from the central dispatch administation of the Kazakh SSR Ministry of Power and Electrification: "In view of the shortage of electric power we forbid you to shut down the power units for planned measures." The vicious cycle is completed.

One cannot remain silent about one other problem. The Yermakovskaya GRES has been in operation for 13 years, but still all of the construction work is not completed. The second line of the coal feed, the oxygen plant, and the slurry unit have not been built. In the power station facility itself the power construction workers have been unable over a 13 year period to install the cranes, lifters and elevators called for in the design. For this reason the repairmen must proceed to the top of the 40-meter boiler several times a day on foot (this is the equivalent of a 14-storey building!).

The collective of the YermakGRES Construction Administration, which must complete the work on the power station, are now busy with new construction projects in Ekibastuz. The impresssion is created that the Yermakovskaya GRES is no longer of any interest to anyone. The power station is now beginning to operate at a loss. Is this not the most important misfortune of all?

8927
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ELECTRIC POWER

UNSATISFACTORY PRODUCTION FIGURES CITED

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 14 Feb 82 p 1

[Article: "More Organization at the Start"]

[Excerpts] The first month of the new year is behind us. This year is the next stage in fulfilling the assignments of the five-year plan, the social and economic program of which was outlined by the 26th Party Congress. What sort of achievements have the workers of the Kazakh SSR's industry accomplished during this beginning and most difficult period?

The work results of the Kazakh SSR's indusry show that there have been some losses. This can be seen mostly in the fact that there was a drop in the labor rhythm of several enterprises. As a result the monthly assignment for growth in labor productivity was not fulfilled by some sectors of the economy and for the Kazakh SSR's industry on the whole.

One of the main reasons for the nonfulfillment of the plan by enterprises of the nonferrous and ferrous metallurgical, chemical, construction materials industries and other sectors of the economy was the unsatisfactory operation of the thermal electric power stations of the Kazakh SSR Ministry of Power and Electrification (Minister B.P. Ivanov). As a result of a large number of emergencies, the power stations were unable to carry the assigned power loads for the generation of electricity. This included the following power stations: Ekibastuzskaya GRES-1, Yermakovskaya GRES, Pavlodarskaya TETs-3, and the electric power stations of the Karagandaenergo and Tselinenergo regional administrations. This in turn led to shutdowns of shops and entire production facilities. The managers of the Kazakh SSR Ministry of Power and Electrification, the party and council organs at the local level must take immediate steps to improve the operation of the power stations.

8927
CSO: 1822/117

ELECTRIC POWER

BRIEFS

MORE ON KURPSAYSKAYA GES--This year it is planned to put into operation the final third and fourth 200,000 KW power units at the high-mountain Kurpsayskaya GES in the Kirghiz SSR. The first two turbines were put on line ahead of schedule at the start of the 11th Five-Year Plan. The experience of the rapid introduction of the units by the collective of the Naryngidroenergostroy Construction Administration in constructing this electric power station is now being copied by other hydroelectric power station builders. Altogether five years have gone by since the start of the construction project until it began producing industrial current. Usually this takes half again as long to accomplish. The previously created production base for the construction of the Toktogul'skaya GES, the first of the Naryn River cascade, was used skillfully. As a result there were savings in time and means for the construction of its own construction materials industry. With its attainment of rated capacity - 800,000 KW - the Kurpsayskaya GES increases by almost a third the output of electricity within the Kirghiz SSR. In connection with the Toktogul'skaya GES the Kurpsayskaya GES will make it possible to provide a stable irrigation for tens of thousands of hectrares of farmland in the Kirghiz SSR and the Uzbek SSR. Having joined in the competition to commemorate the 60th anniversary of the USSR's formation, the Kurpsayskaya GES builders have decided to complete work on the third and fourth power units ahead of schedule. Along with outstripping the plan, the collective of the Novosibirsh Heavy Power Machine Building Plant has promised to deliver both generators to the construction site. This is how the "workers' relay race" operates. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 6 Feb 82 p 9] 8927

TRANSFORMER FOR THE KOLYMSKAYA GES--Magadan. From the moorings of the sea port of Nagayevo has begun the final stage in its long journey to its final destination - a transformer for the Kolymskaya GES, which is under construction. Built at the Zaporozh'ye Transformer Plant, the transformer has traveled clear across the Soviet Union by rail to the sea port at Vanino. Here it was installed on a special platform and then the 186,000 ton unit was shipped on the sea ferry, the "Sakhalin-6". The passage through the Sea of Okhotsk was difficult. The heavy seas that developed following a strom caused the ferry boat to list considerably, but it did not damage the transformer. A. V. Surzhenko, the captain of the "Sakhalin-6", decided to enter the ice. At this point the ship was assisted by the new icebreaker, the "Kapitan Khlebnikov", which took the ferry through the ice field to the mooring of the Magadan sea port. The final 500 kilometers of the journey the transformer will travel in two stages enroute to the settlement of the hydroelectric power station builders: to the transshipment base of the Kolymskaya GES in the settlement of Ultara and then, when the ice on the river is sufficiently thick, it will be shipped on. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 13 Feb 82 p 1] 8927

GEOTHERMAL POWER STATION IN STAVROPOL'--The first of six exploitation wells of a geothermal electric power station has been drilled. By the end of the five-year plan this power station will be in operation near the settlement of Kayasul. Here at a depth of 4,500 meters the geologists have found a sea of heated thermal water. The specialists who came up with the design for the construction of Northern Kazakhstan's first experimental-industrial electric power station, which is to operate on the energy of the earth's interior, believe that the supplies can provide for the operation of a cascade of geothermal electric power stations with a total rated capacity of one million kilowatts. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 24 Feb 82 p 2] 8927

KIEV TETS-6 PROGRESS REPORT--The first power unit of the Kievskaya TETs-6, the largest in the Ukraine, has been put into operation. Its rated capacity is 250,000 KW of electricity and 560 Gcal of heat per hour. The plan calls for the construction of three additional such power units. After they are completed the TETs will be able to provide heat and electricity for the housing of one million people. [Text] [Minsk SEL'SKAYA ZHIZH' in Russian 4 Mar 82 p 1] 8927

PERMSKAYA GRES PROGRESS REPORT--The first sections of the 800,000 KW power unit have reached the construction site of the Permskaya GRES. The supplier was the Leningrad Elektrosila Plant. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 6 Feb 82 p 3] 8927

MORE ON THE PERMSKAYA GRES--The first units of the 800,000 KW power unit have reached the Permskaya GRES construction site; they were provided by the Leningrad Elektrosila Association. The pace of work picks up with each passing day. At the foundation of the main building the arrows of the powerful cranes point toward the sky. The contours of the machine room are clearly discernible as are the concrete plant and other facilities. Approach railroad tracks have been built to the construction site and on the shore of the Kama River they are building a mooring for the cargo ships. This year will be one of the most important stages in the creation of the GRES: they must install 10,000 tons of preassembled reinforced concrete, 16,000 tons of metal structures. Next year the enterprises of the Western Urals will receive power from the first power unit of the new thermal power station. [Text] [Leningrad LENINGRADSKAYA PRAVDA in Russian 26 Jan 82 p 1] 8927

NUREK POWER LINE--At the construction site of the new LEP-550 - from Nurek to the city of Rursunzada - a 200 support has been delivered to the Chormazak Pass. [Text] [Moscow PRAVDA in Russian 8 Feb 82 p 1]
8927

POWER FOR WEST SIBERIA--The northernmost sector of the second power bridge, which will connect the oil and gas fields of the Central Ob' River area with the Urals, has been completed. This is the substation Dem'yanskaya - Surgut. [Text] [Moscow PRAVDA in Russian 2 Feb 82 p 2]
8927

LEP-1150 EKIBASTUZ TO THE URALS--The installers of the Ekibastuz to the Urals LEP-1150 have completed a difficult operation. Having used a system of jacks, powerful winches and steel cables, they have installed two super powerful transformers weighing nearly 500 tons in place. Thus began the installation of the basic substation of one of the Soviet Union's largest power bridges, which will deliver power to the enterprises of the Urals from a series of GRES's, which are to operate on inexpensive Ekibastuz coal. The installers have prepared carefully for this day, as have the railroad workers and specialists from the Zaporozh'ye Transformer Plant, who manufactured the assemblies for the substation. They have been working according to the "workers' relay race" principle, having joined together into a united production pace all those participating in the construction. At the same time they completed work. They prepared the roll-back tracks and anchors for the transformers, which were delivered right on schedule to the site by the railroad workers. In the third quarter of this year the first section from Ekibastuz to Kokchetav will be carrying current. On this route the supports have already been installed and the wires hung. Equipment for the LEP-1150 reaches the cosntruction site of the Ekibastuz conversion complex on a daily basis. The equipment goes directly from the railroad cars to the installers. [Text] [Moscow KRASNAYA ZVEZDA in Russian 7 Feb 82 p 1]
8927

CSO: 1822/116

DEEP OIL AND GAS DRILLING IN AZERBAIJAN OUTLINED

Baku VYSHKA in Russian 19 Feb 82 p 2

[Article by K. Kerimov, Doctor of geological and mineralogical sciences, head of the section of the Southern All-Union Scientific Research Institute of Geophysics: "Looking into the Depths of the Earth: Problems of Search and Exploration in Azerbaijan for Oil and Gas Fields at Great Depths"]

[Text] It is common knowledge that oil and gas are both wonderful sources of heat, and an irreplaceable raw material for the chemical and many other sectors of industry.

Oil and gas occupy one ofthe key positions in the development of the national economy, in the rise in the welfare of the Soviet people, and in guaranteeing the defense capability of the country and the peaceful creative labor of the Soviet people. The 26th CPSU Congress therefore focussed exceptionally important attention on the development of the fuel and energy complex and set important and complicated tasks before the workers of the oil extracting industry in the 11th Five-Year Plan.

Now, in addition to the search and exploration for oil and gas fields in new areas and promising structures, the search and scientific research services of many countries in the world are paying serious attention to the problem of studying the oil and gas content of great depths as well.

The practical results of deep and superdeep drilling in the southern USSR, including within the vast territory of Azerbaijan indicate the great potentialities for developing the oil and gas industry through hydrocarbon fluids which are contained in the very deep deposits.

This is indicated, in particular, by the oil and gas and gas condensate deposits which have been established in a whole series of structures in the North Caucasus (in the Tersko-Kuban depression), Transcaucasus and South Caspian basin (in the Baku archipelago). Oil and gas deposits have been established here, in particular, at a depth of 5,800-6,200 m (Andreyevskiy field, Bulla-more and a number of others). In addition, periodic eruptions of mud volcanoes on individual sections of the vast South Caspian area of regional deflections testify to the presence of fuels in the very deep deposits.

It is known to geological science that based on the substance composition of rocks discharged to the surface, the researchers link the core samples of these volcanoes in the majority of cases with the Paleogene-Myocene and Cretaceous periods. Examples of an even earlier age are presented in a number of cases. Of course, there can be no doubt as to the reality of these conclusions which are based on the results of numerous analyses of the stratigraphic affiliation of the discharged rocks. As for their oil and gas content, there must not be any questions either, since the oil and gas content of the Paleogene-Myocene, Cretaceous and partially the Jurassic has already been proven by the data of single wells on the Alpine folded zone in southern USSR.

Consequently, the oil and gas content of the deeply buried deposits of the majority of structures in the region, no matter how deep they are, should raise no doubts , if only there is a favorable geological situation for this. According to calculations made, the spatial position of the Paleogene-Myocene and Mesozoic complexes of deposits in which there are all the prerequisites for a positive assessment of the oil and gas content covers an interval of 5500-8500 m. If we start from the results of an analysis on the main geological-field and geophysical criteria, then one should note that they almost completely meet the requirements, primarily, tectonic and thermodynamic. Thus, for example, if in East Ciscaucasia and the West Kuban depression industrial deposits have been discovered in geothermal conditions of 170-180 degrees, based on a set of characteristics of the depths of the main oil and gas regions in Azerbaijan, we can quite boldly begin exploration of the depths to 7000-8000 m.

With regard for the actual data for our republic, even now it is important to focus attention on those regions which today may be of prime interest for setting up and conducting search and exploration for oil and gas in the deep deposits of the Meso-Cenozoic complexes. In the Nizhne-Kurinskiy depression, this is primarily the same region of the Kyurovdag-Neftechala zone of elevations where industrial working of the oil and gas deposits of the productive mass is currently underway, the region of the Dzheyrankechlizskiy depression, and finally, this is the depths of the overwhelming majority of structures in the Apsheron oil and gas oblast.

Another, no less important question is clarification of the potentialities of the drilling equipment for revealing and testing the productive areas at such deep depths. It is precisely here, in our opinion, that there must not be any difficulties of a basic or difficult-to-overcome nature.

For the world's deepest wells were drilled for the first time precisely in our country (Kola superdeep well is already approaching the 11,000-meter mark, well No 1 in the Shevchenko field has exceeded the 7500-meter mark). In addition, the greatest number of deep wells (5500-6500 m) has been drilled in the Soviet Union precisely in the flatland and piedmont oblasts in southern USSR, including in Azerbaijan.

Several exploratory wells have been drilled on the territory of our republic (including in the adjacent water area of the Caspian). In five of these wells, formations have been discovered which are no less than 6500 meters from the surface of the earth, and the 7800-meter level has already been passed in Saatly.

Thus, we have the equipment and the know-how to drill wells to great depths. In this respect I would like to touch upon the question of the real potentialities for drilling these wells. It is common knowledge that almost all the geological services of our republic set up their practical activity for arranging and managing work based on a common meterage which is defined by the USSR Ministry of the Oil Industry. It is easiest of all, of course, to plan drilling of wells under these conditions. These are the wells whose drilling almost in advance promises the production engineers the greatest chances of success, both from the viewpoint of the deepness and the selection of the section of the deposit. I primarily have in mind drilling on the new sections and tectonic blocks of the already known fields of wells with depth from 4000-4800 m. This situation is justified by the fact that it makes it possible to confidently solve to some degree those planned assignments which have been set for today before the oil workers of the republic. I stress, namely for today. And in the future?

I have to say directly, unfortunately, that not at all sufficient attention is being paid to this extremely important question. It should occupy a worthy place in solving the general energy problem for many years ahead.

It is sufficient for clarity to cite the example that an enormous number of research organizations of an oil profile which we have in our system of the republic Academy of Sciences and the sector ministries are operating separately from each other. There is no coordination of the scientific research to compile and realize comprehensive programs to search for and explore oil and gas fields at deep and superdeep levels.

It would apparently be expedient in the current situation to institute in the presidium of the Azerbaijan SSR Academy of Sciences or in the production association "Azneft'" a council for coordination of the scientific research institutes and the production work to search for and explore the deep oil and gas fields. It is also necessary to set up outside the association "Azneft'" an independent, and moreover, specialized production organization to drill deep exploratory wells.

At the same time. it would be expedient even now to pursue a certain increase in the deepness of the planned wells through partial reduction in the number of wells that are drilled at the fields to be worked to the planned depths of 4800-5000 meters. This could affect the current level of oil and gas extraction in the republic, but, nevertheless we would be pursuing a course to satisfy the long-range demands of our industry and the national economy for oil and petroleum products.

Work to bring the drilled wells to their planned depths is exceptionally important. There is, unfortunately, something to think about here for both the production engineers and the workers of the scientific research institutes. Whereas of the wells currently drilled to a depth of 4500-5000 m, tens of percents are eliminated for technical reasons, one can speak of the deeper layers of the earth's crust where the rocks in the majority of cases are in high thermobaric states and under anomalously high vapor pressures. Therefore not taking the appropriate measures for the correct selection not only of the technology and equipment, but of the entire technological regime of drilling these wells may lead to discreditation of this work which is very important for the national economy.

In the limits of the majority of structures of the Apsheron oil and gas oblast, one can expect the discovery of Oligocene-Myocene and even Cretaceous formations which are promising in an oil and gas respect at depths from 3000 to 5000 m. This means that even now there are real opportunities in which the oil and gas levels which are associated with the Paleogene-Myocene and partially Cretaceous periods can be revealed here by wells of the same, and even shallower depths which are being drilled in the deposits of the productive masses at the majority of the operating fields of the Kurinskiy basin.

The correct selection of the entire complex of technological characteristics of well drilling is one of the serious questions.

Based on the methods we have developed, it is now possible to predict with a great degree of reliability the zones with anomalous condition of pressures not only in the argillaceous beds, but even in the collectors (by the way, for the first time in the practice of oil geological science).

Thus, although questions of searching for and exploring oil and gas fields at great depths are of exceptional importance for the national economy, many aspects of this large problem contine to remain open. At the same time, a very serious attitude towards it and only intensification of the solutions can play a significant role in fulfilling the decisions of the 26th CPSU Congress and the 30th Congress of the Azerbaijan Communist Party.

9035
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FUELS

TURKMEN GAS WORKERS CONTINUE INTENSIVE WORK

Frunze SOVETSKAYA KIRGIZIYA in Russian 24 Mar 82 p 2

[Article by S. Gochiyayev: "Gas Workers Storm the Depths"]

[Text] A display screen shines on the work table of the head of the industrial association "Turkmengazprom" V. Talday. Conversing, Viktor Andreyevich unnecessarily digs into his writing pad and flips through fat cases with summaries; he can instantly recover the necessary table from the memory of the electronic machine with a simple pressing of the keys. This is a characteristic sign of modern scientific and technical daily life.

"The gas industry would simply be impossible in our time without electronics," says V. Talday. "Automatics and tele-automation are one of the main trends in the development of the sector in the 11th Five-Year Plan. With the completion of automation of the Beurdeshik field we mainly switched to centralized control of the gas pressure and temperature at all the sections. There are two information-computer centers currently in operation in the association. Computers are used to solve over 100 technological, economic and other problems. The day is not far off when a unified automated control system will be created."

A column of figures lights up on the green screen with a long row of zeroes. The sums mainly have nine digits.

"This is the dynamics of our growing production," the head of the association commented. "Since the beginning of the year, 'Turkmengazprom' has provided an additional 300 million m^3 of gas to the plan. The labor mood at the fields is high. Competition in honor of the 60th anniversary of formation of the USSR is gathering strength and we have all the grounds to assert that the above-plan account of the Turkmen gas workers by this great date will reach 650 million m^3.

The course for intensification of extraction and extending the maximum level of removal of raw material on the workable deposits is being combined by us with energetic development of new fields, in particular, in the most powerful field in Central Asia, the Dauletabad. By the end of the five-year plan, the percentage of the new gas extracting complex will be brought to 22 billion m^3. Its role is even more important since the reserves of the new field must gradually and more actively supplement the natural decrease of blue fuel in Shatlyk where half of the Turkmen gas is currently extracted."

The explorers of the depths have spent 5 years getting to the wealth of the Dauletabad "storehouse," and their efforts have been successful: the gas reserves in this field exceed several times those of Shatlyk which has worked so well. Construction of six producer wells has now been completed in Dauletabad, and eight more are being drilled. The brigade of experienced foreman A. Magomedov has worked especially well. It finished drilling the shaft with a record speed for this area, 753 m per machine per month.

The riches of the depths of Turkmenistan are the property of all the multinational Soviet people. Practically the entire country is helping us to develop them. We are assured that the important frontier planned in the decisions of the 26th CPSU Congress, to bring the gas extraction in the republic to 81-83 billion m^3 by the end of the five-year plan, will be reached.

9035
CSO: 1822/131

RECONSTRUCTED BAKU PLANT PRODUCES MORE OIL DRILLING EQUIPMENT

Ashkhabad TURKMENSKAYA ISKRA in Russian 30 Mar 82 p 1

[Article by O. Bagirov, milling machine operator of Kishlinskiy Machine Construction Plant, deputy of the USSR Supreme Soviet, member of the Azerbaijan Communist Party Central Committee Office: "Arsenal of the Turkmen Oil Workers"]

[Text] The Kishlinskiy Machine Construction Plant has sent a large batch of units for underground repair of oil and gas wells ahead of schedule to the eastern shore of the Caspian, to the oil workers of fraternal Turkmeniya. These units were installed on powerful KrAZ-all-terrain vehicles and caterpillar tractors.

The self-propelled repair equipment was made with regard for those severe natural conditions in which it has to operate at the Turkmen oil fields. The machines can get to the boreholes which require repair without roads, through sand drifts and salt marshes. In order to facilitate the work of the drivers and operators, the cabs are equipped with reliable insulation.

The brand "KMZ" is on each unit. Although this is the firm symbol of our plant, it does not at all mean that the machine was made by the forces of only the Azerbaijan machine builders. Of course, it was designed and assembled in Baku. But the assemblies and parts for each unit were obtained from a hundred cities in the country located in all the union republics.

The all-union industrial association "Soyuzneftemash" of which our plant is a member, now manufactures two-thirds of all the domestic equipment for oil and gas extraction. Thirteen plants of the association and two scientific research institutes are working for the technical arsenal of the Soviet oil workers.

The Baku machine builders are now producing about 500 types of oil field equipment. Part of it goes to the Turkmen oil workers. This modern oil equipment includes rocker machines, gusher fittings, units of exploratory drilling, anti-emission equipment and drilling locks. In order to fabricate all of this, we in turn obtain the set-forming items and materials from almost 300 cities.

Now, as stipulated by the decisions of the 26th CPSU Congress, the plants of our sector are undergoing radical reconstruction. During the year which has passed since the congress, the Baku machine builders have increased the volume of production by more than one-third. During this time, about a hundred new technological processes have been introduced, and dozens of automatic mechanized production lines and production sections have been started up. The equipment and the fittings for them were again obtained from many industrial centers in the country.

In the anniversary year, the enterprises are faced with important tasks. They must put into operation new shops, and master the industrial production of a number of new types of machines and units. A schedule has been worked out for a step-by-step introduction of the facilities. The collectives of the enterprise are struggling for accurate observation of this schedule. The result of participating in the technical re-equipping has become one of the important indicators for socialist competition for a worthy meeting of the 60th anniversary of formation of the USSR.

"Soyuzneftemash" will increase the production of equipment for the fuel and energy complex of the country by 1.5-fold by 1985. At the end of the five-year plan, our plants will produce as many items per month as they did for all of 1960. In order to attain these results, they would have to build several large enterprises which would cost the state a lot more than the reconstruction of the existing plants.

9035
CSO: 1822/131

WORK OF TURKMEN GEOLOGISTS DESCRIBED

Ashkhabad TURKMENSKAYA ISKRA in Russian 4 Apr 82 p 2

[Article by M. Mirzakhanov, chief geologist of the TSSR Administration of Geology, honored geologist of the republic: "Explorers of the Underground Wealth"]

[Text] Geologists by right are called the explorers of the depths. They set aside landmarks for future fields, extracting complexes and gas pipelines, and make a great contribution to the development of our industry. In fulfilling the decisions of the 26th CPSU Congress and the 22nd Turkmen Communist Party Congress, the Turkmen geologists have successfully coped with their difficult and very important work on geological study of the territory, increase in the explored reserves of mineral and raw material resources, and primarily fuel and energy resources.

The plans of last year and the first quarter of the current for the increase in explored reserves of natural gas, sulfur, and confirmation of the reserves of explored fields of various minerals have been overfulfilled. The additional increment in gas reserves was 24 billion m^3, and gas condensate 5.875 million T.

Enormous gas reserves have been explored close to the Shatlyk gas field, at the Dauletabad-Donmezskiy field, near the active Central-Asia-center of the country gas pipeline. This field is unique in reserves, scale and type of blue fuel deposits.

A broad complex of studies to reveal and prepare for exploratory drilling the promising areas has been made on the territory of the West Turkmen lowland, in the southern part of Central Karakumy and in the eastern regions of the republic. As a result, the assignment for preparation of structures which are promising for oil and gas for deep drilling has been overfulfilled.

The explored reserves of sulfur have increased for the Gaurdak Sulfur Plant imeni 50th Anniversary of the TSSR. New sections have been found in the operable Gaurdak field and the Kugitangdar'ya River valley. A final estimate will be made this year of the resources and the possibility will be defined of industrial development in the near future of the Karlyuk-Kizyltumshutskiy sulfur field. A state commission has confirmed the reserves of gypsum. Together with sulfur, anhydrite, potassium and rock salts, as well as limestone for soda production, these form the set of mineral resources of the Gaurdak field.

Work is continuing in the Gaurdak-Kugitanskiy mining region for preliminary exploration of the celestine field of Sakyrtma. It has been established that the raw material here is not inferior in quality and reserves to the known Arikskiy field.

The conditions and reserves of bentonite of the Oglanlinskiy field were also confirmed last year. The explored reserves of bentonites here increased by 2.6 million T. Exploration is underway for different types of minerals for the construction industry. In the Tashauzskaya Oblast, for example, reserves of sandy-shale rock and loam have been explored and confirmed in the Kernayskiy field which has already been transferred to industrial development. Detailed exploration is being finished up of the Geok-Tepinskiy field of limestone which is suitable for facing buildings and architectural groupings.

New manifestations of minerals have been discovered. A geological map has been compiled, the basis for scientific forecasting of the fields. Hydrological-geological and engineering-geological work has been done which is aimed at solving the most important task, the best provision of water to the cities and villages. Two fields of mineral water have been found and the republic national economy has been given 12 water wells.

In the last two five-year plans, the geological explorers have solved a number of serious problems to find and prepare promising areas for oil and gas in the west of the republic. Over 40 areas have been prepared for deeply occurring deposits in the West Turkmen lowland and the Mesozoic complex of West Kopetdag. There is no doubt as to their promising future. Deep drilling of these areas would guarantee the planned increase in oil and gas reserves in this region.

An enormous army of explorers of the depths is toiling on the vast spaces of the republic. Despite the complicated working conditions, the people have been models of true heroic labor. According to the results of the all-union and republic socialist competition, the collective of the oil exploration expedition was announced the winner last year and was awarded the challenge Red Banner of the CPSU Central Committee, the USSR Council of Ministers, the AUCCTU and the Komsomol Central Committee, and the Turkmen geological exploration expedition was awarded the challenge Red Banner of the Turkmen Communist Party Central Committee, the TSSR Council of Ministers, the Turkmen Republic Council of Trade Unions and the Turkmen Komsomol Central Committee. The collective of the Kugitanskiy geological exploration expedition was awarded the challenge Red Banner of the USSR Ministry of Geology and the trade union central committee of the sector.

It is impossible not to make note of the work of the leading drilling brigades, the winners of the competition of B. A. Batyrov and A. Kuvanchev from the oil exploration expedition, Kh. Kul'metov from the Kugitangskiy geological exploration, and A. Ashirov from the Nebit-Dag geological exploration expeditions, and many others who coped ahead of schedule with the program of the first quarter and prepared a worthy gift for their professional holiday.

A lot of merit for effective resolution of the national economic tasks set before the Administration of Geology goes to the geologists and geophysicists

A. A. Nikolayev, Z. D. Kuliyev, A. G. Yeziashvili, S. I. Trofimova, A. D. Dorovskiye, Ye. I. Mal'tsev, V. P. Vydumkina, S. Ismatov and others.

If we speak about the components of success, then it is determined a lot by the atmosphere of creativity which is inherent to geological exploration as a whole, no matter which direction of work we are speaking of. The technology, equipment and production processes are being intensively improved.

The explorers of the depths are now bearing an intensive labor watch in honor of the 60th anniversary for formation of the USSR. There is a lot of work ahead: they are faced with fulfilling a volume of geological exploration totalling R 85 million. They will continue to search for gas deposits in the regions of Central and East Turkmeniya, complex geological studies and parametric drilling in order to reveal and prepare different types of promising structures, primarily in the regions of the active territorial-production complexes.

The work which remains to be done this year can be compared to a mass attack whose main goal is to multiply the wealth of our motherland even more.

In the photograph: drilling foreman G. P. Shevchenko, head of the central engineering and technical service A. P. Sedov and head of the borehole V. N. Mel'nikov from the Anauskiy oil exploration expedition of the Turkmen SSR Administration of Geology.

9035
CSO: 1822/131

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JPRS 81195

1 July 1982

USSR Report

ENERGY

No. 106

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JPRS 81195

1 July 1982

USSR REPORT

ENERGY

No. 106

CONTENTS

ELECTRIC POWER

Boguchanskaya GES Construction Report
(PRAVDA, 15 Apr 82) 1

Rostovskaya AES Construction Report
(L. Shamardina; EKONOMICHESKAYA GAZETA; Apr 82) 3

Bureyskaya GES Construction Report
(O. Kvyatkovskiy; STROITEL'NAYA GAZETA, 24 Mar 82) 5

Nizhnekamskaya GES Construction Report
(R. Sabirov, Kh. Mukhametshin; PRAVDA, 23 Apr 82) 9

Briefs

Urengoy LEP 11
Kurpsayskaya GES Power Line 11
Dem'yanskaya-Surgut Substation 11
Kuvandyk-Orenburg Electrified Railroad Line 11
Mary-Karakul' LEP 11
Navoyyskaya GRES Report 11
Kievskaya Tests-6 Report 12
Moldavskaya GRES Report 12
Svir'- Petrozavodsk LEP 12
New LEP on Kola Peninsula 12
Ust'- Kut LEP Over Vitim River 13
Atomgrad in Tatar ASSR 13
Ust'- Sredekaskaya GES Report 13
Geological Map of Soviet Northeast 13
LEP-500 From Luchegorskaya GRES 14
Neryungri Boiler 14
Tyumen' TETS Report 14
Neryungrinskaya GRES Report 14

Cheboksarskaya GES Report 14
Dneproges Report 14
Kolymskaya GES Report 15
Transformers for Ekibastuz 15
Ekibastuzskaya GRES-1 Smoke Stack 15
Rovenskaya AES Report 15
LEP-500 For Primorskiy Kray 16
Zaporozh'ye Transformer Plant Report 16

PIPELINES

Separate Pipeline Shipment of Oil Sulfur Content Mastered (L. Levitskiy; IZVESTIYA, 7 May 82) 18

Erection of Compressor Stations on Gas Pipelines Must Be Speeded Up (STROITEL'NAYA GAZETA, 28 Mar 82) 20

Magnitude of Task
Work Status Summarized
Novokazymskaya Station Completed Early, by A. Zhdanov
Republic, Oblast Organizations Help
Working, Living Conditions, by A. Serbinov
Late Equipment Deliveries, by V. Parshin, V. Melikhov
Concluding Remarks

Pipeline Construction Progress in Ufa Area Described (A. Zinov'yev; IZVESTIYA, 29 Apr 82) 28

Gas Pipeline Construction Progress in Sverdlovskaya Oblast Reported (M. Makhlin; EKONOMICHESKAYA GAZETA, Mar 82) 33

Gas Pipeline Construction Progress in Kursk Region Described (V. Kulagin; IZVESTIYA, 23 Apr 82) 38

Briefs

Pipe Manufacturing Efficiency 43
Gas Pipeline in Karakumy 43
Gor'kiv Pipeline Welding 43
World's Greatest Pipeline Capacity 43
Pipeline Construction in Lithuania 43
Perm'- Al'Met'Yevsk Oil Pipeline 44
Powdered Paint for Pipelines 44
Almaznaya Turbocompressors Installed 44
Ukrainian Pipeline Builders' Amenities 44
'Pockets' for Weighting Purposes 44
Petroleum Tekhnikum Modernization 45

ELECTRIC POWER

BOGUCHANSKAYA GES CONSTRUCTION REPORT

Moscow PRAVDA in Russian 15 Apr 82 p 1

/Article: "Another GES on the Angara River"7

> /Text7 Kodinskiy, Krasnoyarskiy Kray, 15 April, (PRAVDA correspondent V. Prokushev). On 17 April, All-Union Communist Subbotnik Day, the first cubic meter of concrete will be poured into the foundation of the dam of the Boguchanskaya GES. The construction of the fourth hydroelectric power station in the Angara River cascade will at that time begin a new and crucial stage.

The builders of the Boguchanskaya GES worked hard last year, having "shoveled" more than 100,000 tons of rocky earth. In September, one month ahead of schedule, they backfilled the coffer for the trench of the first section.

This past winter was a serious test of the Boguchanskaya GES builders' workmanship and courage. Having closed off the coffer, they pumped water from the trench so that they could begin deepening it. To pour concrete they had to remove no more and no less than 250,000 cubic meters of rocky earth. Not an hour could be lost. But a threatening barrier unexpectedly blocked the work of the blasters, excavator operators, and BelAZ drivers: every hour as much as 2,000 cubic meters of so-called filtering water began filling the trench.

The brigade of M. Brudnev was sent to fight against this problem. In the northern piercing wind the pumps froze and would not start. But the men were stronger: unwillingly, millimeters at a time the water began to recede. They did not wait for it to completely drain - they geared up to blast and use a re-equipped excavator to remove the earth from under the layer of water.

In a word, the considerable experience and tested character of the hydroelectric power station builders was victorious. Let us take a look at Maksim Vladimirovich Brudnev. He has never chosen easy paths:

as an adolescent during the war he went to work at a plant in Komsomol'sk-na-Amure; then he helped to build the Krasnoyarskaya GES; he returned home to Zeya; and now he is again in the front ranks of the first to volunteer. Such men can shoulder any difficulties.

In addition to the trench, they are building an airport, roads, and the workers' settlement of Kondinskiy. Modern housing units consisting of five and nine-story buildings are already beginning to take shape.

Now, when the concrete work will get underway, the tasks of the builders will become more complicated. As quickly as possible they must decide how to organize the smooth production of a great deal of concrete. The gravel-sorting facility is going up slowly; and there are not enough railroad approaches. And the customer - the directors of the future GES - does not always supply the builders with high-quality technical documentation.

The construction of the Boguchanskaya GES is entering a new stage in its development. This requires even better organizational work and more responsibility on the part of all who are participating in the construction of the hydroelectric power station.

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ROSTOVSKAYA AES CONSTRUCTION REPORT

Moscow EKONOMICHESKAYA GAZETA in Russian No 16, Apr 82 p 9

/Article by L. Shamardina, correspondent, Volgodonsk, Rostov Oblast: "Around the Dam: How To Speed Up the Construction of Facilities for the Rostovskaya AES"/

/Text/ As a rule, special cooling ponds must be built for atomic electric power stations. At the Rostovskaya AES due to its special situation near a large body of water, they have been able to come up with another, more economical solution.

Meter by meter the dam proceeds from the shore. The ten-kilometer crescent of the dam will separate the bay of the Tsimlyanskoye reservoir. These 50 square kilometers of water surface, which are set apart from the reservoir by a reliable, multi-layered wall, will become the cooling pond.

The construction of the dam must be completed no later than September of 1984. To accomplish this it is necessary to pour 120,000 to 130,000 cubic meters of rubble stone into the body of the dam every month. As of now the actual pace of the work is 35,000 to 40,000 cubic meters every month.

The rubble stone is brought to the construction site from Repnyanskiy quarry in vertushka trains. At the Volgodonskenergostroy /Volgodonsk electric power station construction/ Trust they decided that in order to speed up the work another administration - an administration of mechanized work (USMR) - would begin working on the other end of the dam to do backfilling. This was worked out with the Atomenergostroy /Atomic electric power station construction trust/ administration.

If a "vertushka" is unloaded at Atomenergostroy, the representatives of the USMR, having left the crane and bulldozer in the steppe, leave to do other jobs. While the USMR is receiving stone, equipment and people are idled at Atomenergostroy.

With all of this disorder among the two organizations the dam is proceeding slowly. And the delay is increasing. What is needed to ensure that the dam increases in length by 40 to 50 meters every day? In the opinion of the railroad workers it is necessary to increase the reserve and to lengthen the unloading platform at the Atomenergostroy site and then to expand unloading operations. In practice this requires nearly one million rubles in additional expenditures and further delays in the time periods amounting to two to three months. And the desired result will not be obtained. Here is why.

One train represents 1,000 cubic meters of stone. It takes four and half hours for a special section of the Atomenergostroy administration to unload such a train. But the interval between "vertushkas" is 32 hours on the average. This is more than enough to transport the stone and put it into the dam with some left over. We shall note that each 1,000 cubic meters of stone lengthens the dam by 10 meters altogether.

At present there are four "vertushkas" running between the quarry and the construction site. Twelve are needed. As regards room for unloading, there is almost an unlimited amount of space in the steppe where the USMR is operating. Thus there is no substance to the argument that the unloading platform needs to be lengthened.

The dam needs a single boss, who is assiduous and motivated - Atomenergostroy. In addition to everything else, such a decision will make it possible to maneuver equipment and to reduce the "shoulder", by putting the emphasis on the nearest site, where the USMR is now so carelessly functioning.

The deputy chief of Atomenergostroy, Ye. Larin, and the chief in charge of the construction of the dam, A Krasnopol'skiy have this to say:

"If they put all of the equipment and both unloading sites under our supervision, then without additional expenditures and by just being able to maneuver and to employ a three-shift operation we will be able to accept 40,000 to 50,000 cubic meters of stone every 24-hours."

The solution seems rather simple. The Volgodonskenergostroy organization has the next word. Particularly since the railroad workers of the Sal'skiy and Likhovskiy departments, which service the line between the quarry and the construction site, have contracted with the builders to cooperate and have promised to provide the needed pace for delivering construction materials.

8927
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BUREYSKAYA GES CONSTRUCTION REPORT

Moscow STROITEL'NAYA GAZETA in Russian 24 Mar 82 p 2

/Article by O. Kvyatkovskiy, correspondent, Zeya - Novobureyskiy - Talakan, Amur Oblast: "A Box of Knowledge for Bureya"7

> /Text7 From the editors. After this article was already prepared for release, the USSR Ministry of Power and Electrification informed us that the Collegium of that ministry has approved a design for the construction of a building near the dam at the Bureyskaya GES. Thus, one of the shortcomings has been eliminated. But this does not at all alter the overall situation at the construction site. The construction site has been forced fo "mark time" due to the extended agreements.

For dozens of years the restive Bureya River has enticed hydroelectric power station builders. Even before the war its gigantic electric power potential was estimated. In 1960 they developed a diagram for the comprehensive use of the Amur River tributaries. It was planned to build several GES's on the Bureya River and to send the power to the growing cities of Blagoveshchensk, Khabarovsk, and Komsomol'sk. Specialists emphasized that dams on the Bureya river would protect hundreds of thousands of hectares of valuable arable land in the Far East from flooding.

But a considerable amount of knowledge on the construction of hydroelectric power stations was needed - such as that obtained from the construction of the Zeyskaya GES. Yes, the Zeya was the first and the pride of Far Eastern hydroelectric power station building. But in comparison with the Zeyskaya GES, the Bureyskaya GES is a giant. Six units with a total rated capacity of two million kW. This is more than seven billion kW-hours of electricity per year. The dam rises some 143 meters - higher than the Bratskaya, Zeyskaya and Krasnoyarskaya GESs - in the Talakanskiy range. It is impressive! But we will not fall into the pathetic element. It is too early for that.

During the six years of the construction work on the hydroelectric power stations on the Bureya River, 10 percent of the funds allocated and required for the start-up of the first unit have been assimilated. The story of this construction site, its present status, and prospects for the near future is a sad tale of lost time. And what is even more pathetic - the tale is not a new one. The lessons learned from the Bratsk and Krasnoyarsk stations are well known. It has been demonstrated that the 16 years required for the Zeya station is an unjustifiably long period of time. The opinion of major Soviet specialists is well founded: by reducing the amount of time required for the preparation work in the creation of each hydroelectric power station from five to six years of time can be won.

However, the tactics of building the Bureyskaya GES did not take this into consideration; they remained the same as before.

The main emphasis here was placed upon the natural switching of mastery, knowledge and experience - all opportunities of the remarkable collective, which evolved in the administration of the Zeyagesstroy /Zeya hydroelectric power station construction organization/. It was this firm confidence in what had been tested by the first Far Eastern dam builders that led the chief of the administration, Hero of Socialist Labor A. Shokhin and his closest associates, when the first circuits of the new project were planned. This confidence justified the boldness with which the builders approached the Bureya River.

They planned to be the first in Far Eastern practices to make use of the continuous method of pouring concrete; they made several changes in the structure of the dam itself and the layout of the start-up; and they insisted upon the rapid construction of a comfortable, permanent settlement. The logic behind their conclusions was clear: to reduce the time periods for the preparation and execution of work, and in the final analysis to realize significant savings of state funds. The powerful hydroelectric power station could completely avoid the fate of its predecessors.

No one anticipated the pause which lasted for six years. Thousands of Zeyskaya station builders competed for the right to go to Talakan and to participate in the intial work. Today the number of construction workers "from the first peg" on the Bureya River project can be counted on your fingers.

The disputes of several years standing between specialists of the USSR Ministry of Power and Electrification's Lengidroproyekt /Leningrad Hydroelectric Power Station Design Institute/ and Zeyagesstroy on several technical solutions can scarcely be called substantial. More to the point they are of a petty nature and of a narrowly departmental interest. The dispute was surrounded by engineering complexities and doubts with a scientific flavor. This led to a prolonged disagreement. The collegium of the USSR Ministry of Power and Electrification should have assumed the role of arbitrator. But this role was entrusted to Orgenergostroy /All-Union Institute for the Designing and Organization of Power Station Construction7, the attacks of which were repelled by the Lengidroproyekt with elegant carelessness. We will not go into all of the technical details, but will note that until quite recently the design for the placement of the GES building had not been approved. Without this it was impossible to define the work plan and to compile a realistic plan.

For four years in a row the financing of the work on the Bureya River was held at 7 million rubles. These monies were quietly used to construct facilities for the industrial base in the settlement and at the transshipment point on the Trans Siberian railroad. Roads and a temporary settlement were created. At the same time the colllective of the Bureyskiy construction and installation administration of Zeyagesstroy had to build a 78-kilometer stretch of a high-voltage power transmission line on its own, since a shortage of electricity had on several occasions threatened the very existence of the construction project. Just as the work on the Zeyskaya GES was coming to an end, there was a sharp drop in work volumes. And the seasoned specialists began leaving. By this time the administration collective has been reduced by nearly 50 percent. Now the Zeyskaya GES builders can be encountered in various regions of the Far East, except at the construction site of the Bureyskaya GES. The vagueness of prospects has closed the road to people.

N. Fomenko, secretary of the Bureyskiy Rayon Party Committee, says with conviction: "Someday the Bureya's time will come. Particularly, since work on the Nizhnebureyskaya GES will commence this year. This GES is located next to a railroad. The all-hands method will have to be used to reach the river, which includes large shipments in volumes for which the builders are not prepared. We would like to avoid this."

It is not just the financing that is delaying the work today. The temporary settlement is almost filled with people. There is no way to accept people even with the goal of future volumes: the permanent settlement does not have a general plan. And it is not at all clear what sort of housing units are to be built and where the panels are to come from. The First Deputy Minister of Power and Electrification Falaleyev has repeatedly, in the presence of witnesses, solemnly promised to provide the Bureyskaya GES with a house building combine. But the first five-story buildings went up in temporary Talakan; these buildings were made of Zeyskiy panels delivered at great labor and from a great distance.

We shall assume that a house-building combine for Bureya is an unsolvable problem at a ministerial level. But if you travel into the settlement from the power station through the reddish hills, you run into the pathetic supports of the high-voltage power transmission lines - without wires they greatly resemble burnt trees. This power line is urgently needed by the Talakan builders; in the full sense of the word the problem is in their hands. But the USSR Ministry of Power and Electrification does not plan to supply the 30 kilometers of wire until the fourth quarter! This means that in the winter the heavy excavators will again start working and the settlement will be frozen solid, and that aircraft will have to be used to bring in spare parts for the outdated power trains.

Probably there is no need to go into the details to demonstrate the difficulties that are being encountered by the construction workers on the Bureya River. They are apparent and intensified - be it the repair of equipment, the augmentation of the motor vehicle park, deliveries, the structural reorganization of the construction and installation administration...But one way or another they all become key problems. In conditions of the growing need for electricity in the region, each condition which lengthens the time for the creation of the Bureyskaya GES must be viewed as an emergency.

The spanning of the Zeya River took place in the eighth year of work following the landing of the first builders. In the seventh year of Talakan the builders cannot even dream of spanning the river. This tale of lost time sounds even more alarming. Alas, the time cannot be recovered.

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ELECTRIC POWER

NIZHNEKAMSKAYA GES CONSTRUCTION REPORT

Moscow PRAVDA in Russian 23 Apr 82 p 3

/Article by R. Sabirov, PRAVDA correspondent, and Kh. Mukhametshin, SOTSIALISTIK TATARSTAN correspondent, Tatar ASSR: "Equalling the Record"7

> /Text7 Four power units are to be put into operation at the Nizhnekamskaya GES this year. How is work proceeding at the power station construction site?

The taut days of last December, when the collective of the Spetsgidromontazh /Special Hydroelectric Power Station Installation Trust7 Trust installed the eighth unit of the power station within a record time period - 33 days in all, are still fresh in the memories of the Nizhnekamskaya GES - the final stage in the power cascade of the Kama River. This success was achieved through the use of a progressive method - the preliminary enlarged assembly of portions of the power unit at special sites. The rapid work pace is still being maintained. The builders are seeking to secure and develop their success.

A. Baykov, the chief of the sector of the trust, reports, "the organization of labor on the eighth power unit was a unique standard for us. We managed to almost halve the time periods required for the work. We are sustaining the same taut, but realistic schedule even now. This year we expect to install and hand over for operation another four units with a total rated capacity of 312,000 kW."

"Brigade specialization helped to achieve this success. On the eighth power unit, for example, one brigade was engaged in assembling the rotor, another worked on the stator, a third worked on the operating impellers, and so forth. By the way, this did not hinder the ability of people to exchange jobs - each worker can at any time take over the task of his comrade."

The installers are working diligently these days. In May they are to hand over the ninth power unit for operation.

We are at the power station's dam. Below the water of the Kama River seethes and foams. But above the dam the water is extremely calm. Soon the locks will permit the steamships and barges from the Kama, Oka and Volga rivers to pass. Work is in full progress here.

Ahead of us is the brigade of concrete workers from the Nizhnekamskgesstroy /Nizhnekamskaya GES Construction/ Administration, which is under the supervision of Z. Yunosov. This brigade was the intiator of the competition to provide a worthy greeting for the 60th anniversary of the formation of the USSR. The collective has already fulfilled two of its annual assignments. Now each worker is daily realizing two shift norms. At this time the brigade is working in the craters for the tenth and eleventh power units. The workers were the first to switch to the brigade contract at the construction site. They have pledged to pour no less than 6,000 cubic meters of concrete this year. They are strictly adhering to their word. For the period January through March and the first three weeks of April they have already poured more than 2,000 cubic meters of concrete into the body of the power station. The comprehensive brigade led by R. Fatkhutdinov has almost reached this level.

The Nizhnekamskaya GES is being built and is already operating. It has already provided the national economy with more than two billion kW-hours of electricity. The completion of its construction is awaited with impatience by the railroad workers and truck drivers. Over the roof of the GES machine room will pass very important railroad and motor vehicle bridges over the Kama River; these overpasses are very important to the national economy of the autonomous republic and the entire Volga River area.

The Nizhnekamskaya GES builders are working very hard. However, they are concerned about several unresolved problems. Above the dam the enormous Nizhnekamskoye reservoir is being created, which will flood a great deal of agricultural land and oil fields if steps are not taken in time and reliable protective facilities are not built. The creation of dams within the Tatar ASSR and the Bashkir ASSR is significantly behind schedule and is not keeping pace with the construction of the GES itself. In the last five-year plan alone the builders failed to assimilate nearly 12,000,000 rubles. There is a real threat that the power units being put into operation this year for the power station will not be able to provide electricity due to the lack of adequate water pressure.

The builders and operators of the GES have serious claims against the Novosibirsk Sibelektrotyazhmash /Siberian Electrical Heavy Machine Building/ Plant and the Kamkabel' /Kama Cable/ Plant for failing to deliver important equipment on a timely basis.

The Nizhnekamskaya GES must become operational during this five-year plan at full capacity. In order to adhere to the established time periods for the construction and hand-over of the GES, it is necessary for all enterprises and organizations participating in the project to function smoothly and in an organized manner.

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ELECTRIC POWER

BRIEFS

URENGOY LEP--Electricity has reached one of the northernmost Western Siberian natural gas deposits - Urengoy. A 600-kilometer LEP, which links the main gas field with the Soviet Union's unified power system, has been put into operation. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 7, Feb 82 p 3] 8927

KURPSAYSKAYA GES POWER LINE--A high-voltage power transmission line between the Kurpsayskaya GES and Suzak in the Kirghiz SSR, a distance of 130 kilometers, has been placed under load. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 7, Feb 82 p 3] 8927

DEM'YANSKAYA-SURGUT SUBSTATION--A second power bridge will join the [oil] fields of the Central Ob' River area with the Urals. The northernmost sector, the Dem'yanskaya to Surgut substation, has been put into operation. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 7, Feb 82 p 3] 8927

KUVANDYK-ORENBURG ELECTRIFIED RAILROAD LINE--A 200-kilometer stretch of electrified railroad line has been put into operation on the section between Kuvandyk and Orenburg. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 7, Feb 82 p 3] 8927

MARY-KARAKUL' LEP--The final, sixth 210,000 kW power unit of the first section of the Maryyskaya GRES imeni 50 Years of the USSR has been put into operation; also, a high-voltage power transmission line between Mary and Karakul' has been completed. In difficult natural conditions large power industry facilities have been built, which are of great importance in the development of the production forces of the Turkmen SSR and other republics of Central Asia. For this remarkable labor victory, Comrade L. I. Brezhnev has warmly congratulated all who participated in the construction of the new power station and power transmission line. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 6, Feb 82 p 3] 8927

NAVOYYSKAYA GRES REPORT--The construction of the Navoyyskaya GRES has been successfully completed; it has been put into operation at full capacity - 1,250,000 kW. The construction in complicated natural and climatic conditions of a large thermal electric power station, which will burn locally available natural gas, is a major contribution to increasing the energy potential and the development of the industrial and agricultural production of the Uzbek SSR and other union republics of Central Asia. L. I. Brezhnev has warmly congratulated the workers, engineers, technicians and all who participated in the construction of the Navoyyskaya GRES for their tremendous labor victory. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 11, Mar 82 p 5] 8927

KIEVSKAYA TETS-6 REPORT--The first power unit of the Kievskaya TETS-6, the largest in the Ukraine, has been put into operation. The rated capacity of the unit is 250,000 kW of electricity and 560 gigacalories of heat per hour. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 11, Mar 82 p 5] 8927

MOLDAVSKAYA GRES REPORT--The Order of the Red Banner Moldavskaya GRES imeni 50 Years of October, which in the new city of Dnestrovsk is the flagman of the Moldavian SSR's power industry. The electricity generated by the power station will go to the cities and villages of the republic and several southern oblasts of the Ukraine. There are now 12 power units in operation at the GRES. Their rated capacity has already exceeded 2,400,000 kW. During the days of the labor watch in honor of the Ukrainian SSR a steam and gas unit, which operates in concert with the eleventh power unit, was put into operation. Scientists and specialists from Khar'kov and L'vov actively participated in the installation and adjustment of the steam and gas unit. Their assistance made it possible to put the complex into operation at the assigned level. A second steam and gas unit is now being installed at the Moldavskaya GRES. [Text] [Kiev PRAVDA UKRAINY in Russian 23 Mar 82 p 1] 8927

SVIR'-PETROZAVODSK LEP-330--A powerful LEP-330 has been put into operation between Svir' and Petrozavodsk, a distance of 132 kilometers. The completion of this line provides a reliable power supply to the developing industrial regions of Petrozavodsk, and especially Kondopoga. The installers of mechanized columns No 6 and No 46 of the Sevzapelektroset'stroy [Northwest Electric Power Network Construction] Trust labored diligently to build the new LEP. The route of the LEP passed through swamps and tayga. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 7 Mar 82 p 1] 8927

NEW LEP ON KOLA PENINSULA--A powerful rural high-voltage power transmission line is now being built in the forested tundra of the White Sea coastal area of Kola Peninsula. It will join the fishing settlements of the area with the rayon center - the village of Umba. The new LEP will promote the further development of agriculture in the coastal area. For there is more land to be reclaimed here than in other places on the peninsula. The machine operators and builders, who will assimilate the virginland, will follow the power workers into this area. Agricultural production is a rapidly developing sector of the national economy of Murmansk Oblast. One can readily see this in the amount of electricity available to its enterprises. Last year, for example, the centralized generation of electricity for rural consumers increased by nearly one third as compared with the preceding year. In the 11th Five-Year Plan this indicator will triple. /Text/ /Moscow KRASNAYA ZVEZDA in Russian 14 Feb 82 p 1/ 8927

UST'-KUT LEP OVER VITIM RIVER--The first supports of the power transmission line, which extend from Ust'-Kut along the Baykal-Amur Mainline Railroad, have been installed on the right-hand shore of the Vitim River. Soon the electric power of the Ust'-Ilimskaya GES will reach the the Chita section of the BAM - the settlement of Kuanda. Before the end of the year the collective of the mechanized column No 104 of the Vostoksibelektroset'stroy /East Siberian Electric Power Network Construction/ Trust intends to install the supports and to hang wire at the 115-kilometer point of the Chita section and to reach the Kodarskiy tunnel. /Text/ /Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Apr 82 p 1/ 8927

ATOMGRAD IN TATAR ASSR--Construction of a future "atomgrad" has gotten underway in the Tatar ASSR. The atomgrad is going up at the site of the village of Kamskiye Polyany. A temporary heating plant has been providing power at the construction site. The first multi-story buildings have already been built. The best collectives of workers, which are under the supervision of U. Naurbiyev and other praiseworthy brigade leaders, have been sent to build the new atomic electric power station. /Text/ /Moscow IZVESTIYA in Russian 23 Mar 82 p 1/ 8927

UST'-SREDEKASKAYA GES REPORT--Specialists from the Lengidroproyekt Institute have decided on two spots where in the near future the dam of the Ust'-Sredekaskaya GES - the second in the Kolyma River cascade - may be built. An expedition from Lengidroproyekt is drilling exploratory wells. The driller brigades of V. Vartenev and A. Grishchakov are working at a pace well ahead of the norm. Having agreed to increased pledges in honor of the 60th anniversary of the Soviet Union, they are laboring diligently to ensure that they meet their goals. /Text/ /Moscow STROITEL'NAYA GAZETA in Russian 24 Mar 82 p 3/ 8927

GEOLOGICAL MAP OF SOVIET NORTHEAST--To shorten the path to the underground storage rooms, prospectors will be ably assisted by a geological map of the far Northeast of the Soviet Union. The final compilation of this map was completed in Magadan. The map will "prompt" geologists on the spots of the most likely concentration of minerals, the direction of survey and exploration work within an area that occupys one sixth of the Soviet Union. More than 200 colors and shades of color and hundreds of symbols were needed to reflect on the map the scientific information on the geological structure of the earth's core in the area. This information was gathered over the past 50 years by thousands of geologists, geophysicists, and scientific workers. Four million kilometers is the total length of the paths covered in the tundra and tayga of the North. Today, in addition to the traditional hammer, the geologists use powerful drilling equipment and data obtained from aircraft and satellites. /Text/ /Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 3 Apr 82 p 2/ 8927

LEP-500 FROM LUCHEGORSKAYA GRES--Vladivostok. Construction of the LEP-500 was completed prior to the anniversary of the opening of the 26th Party Congress. This had been the pledge of the power construction workers in the Primorskiy Kray. They have kept their word. A high-voltage power transmission line, a distance of 346 kilometers, is ready to accept current from the Luchegorskaya GRES and to transmit from the north to the south of the Kray. Less than two years ago in the deep tayga they began cutting a path for the LEP-500. In the fall of last year the first section was already in operation. And now the second section is ready. Power workers from Siberia, the Urals, the Kazakh SSR and other union republics helped the Primorskiy Kray builders to raise the LEP-500. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 25 Feb 82 p 1] 8927

NERYUNGRI BOILER--A power water-heating boiler has been put into operation in Neryungri. It insures a stable supply of heat for the city, which is the center of the Southern Yakut TPK. Unique equipment has been installed here - the Soviet Union's first hot-water boilers to burn coal dust. From the start of the construction to the first stoking of the first boiler has taken only slightly more than one year - such is the pace provided at this key facility of the complex by the subelements of the Neryungrigresstroy [Neryungri GRES Construction] Administration and the subcontracting organizations. [Text] [Moscow STROITEL'NAYA GAZETA in Russian 3 Feb 82 p 2] 8927

TYUMEN' TETS REPORT--Tyumen'. The construction of a large thermal electric and heating plant in Tyumen' has been declared a shock project. The construction of the new plant led to the rapid development of the capital of Siberian oil. The rated capacity of the future TETS is in excess of 1,700 gigacalories of heat per hour. It will burn natural gas from northern deposits. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 25 Feb 82 p 1] 8927

NERYUNGRINSKAYA GRES REPORT--An important stage has been reached in the construction of the Neryungrinskaya GRES - the pouring of concrete for the smoke stack. The height of the stack is 240 meters and the diameter at the foundation is 35.5 meters. This project is quite unique. It is estimated that the compression and expansion of the walls from the large temperature deviations and that there is seismic activity in the 8 ball range. For this reason the fittings for the 850 mm wall is doubled; and the most durable steel is used for the stack. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Apr 82 p 2] 8927

CHEBOKSARSKAYA GES REPORT--The fourth power unit of the Cheboksarskaya GES has been placed under industrial load. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 17, Apr 82 p 3] 8927

DNEPROGES REPORT--It stands above the great river as a symbol of the labor feats of the Soviet people during the years of the first five-year plans. This is not merely a monument to the laborers; it is the pride of the Soviet power industry. The first hydroelectric power station even today does not lag in meeting modern requirements. But the workers of the Ukrainian department of the All-Union Institute Gidroproyekt imeni S. Ya. Zhukov have started to develop a plan for the modernization of the GES. All turbines and generators of the Dneproges-1 will soon be replaced by new ones. The rated capacity of the power station will increase substantially. [Text] [Moscow IZVESTIYA in Russian 19 Feb 82 p 2] 8927

KOLYMSKAYA GES REPORT--The ship Sakhalin-6 has reached the moorings of the Magadan sea port, bringing a transformer for the next power unit of the Kolymskaya GES. The weight of this cargo plus the special railroad platform car exceeds 230 tons. The port workers are transferring the transformer to a special auto-train, which was dispatched to Sinegor'ye. The trip to Magadan was made by the Sakhalin-6 with the help of a powerful icebreaker, the Kapitan Khlebnikov, which is now accompanying a group of ships in the Sea of Okhotsk. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 11 Feb 82 p 1] 8927

TRANSFORMERS FOR EKIBASTUZ--For the creation of the power bridge from Ekibastuz to the Center super-powerful transformers were required. Their production was entrusted to the Zaporozhtransformator Association. The first power units of the Ekibastuzskaya GRES were equipped with powerful assemblies at 630 kV-amperes bearing the mark of the Zaporozh'ye enterprise. Recently the Ukrainian electrical equipment builders manufactured transformers with an operating voltage of 1,150 kV of alternating current and 1,500 kV of direct current. In Zaporozh'ye a special facility is being built to produce super-powerful transformers. A new giant of industry is being built, which has twice won the order of "Dneptostroy". The complex covers some 56 hectares of land. The main assembly area will be equipped with bridge cranes capable of lifting as much as 1,000 tons. [Text] [Moscow IZVESTIYA in Russian 3 Mar 82 p 2] 8927

EKIBASTUZSKAYA GRES-1 SMOKE STACK--The concrete trunk of the smoke stack for the Ekibastuzskaya GRES-1 has reached a height of 330 meters, a record mark. Such is the giant growth of the project - the only one of its kind among the thermal electric power stations of the Soviet Union. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 28 Mar 82 p 1] 8927

ROVENSKAYA AES REPORT--Kuznetsovsk, Rovno Oblast. The collectives of teh construction and installation organizations which are building the Rovenskaya AES have completed their production program for the first year of the five-year plan ahead of schedule. All work connected with the start-up of the second power unit with a rated capacity of 440,000 kW was significantly reduced; now work is successfully underway on the third power unit with a rated capacity of 1,000,000 kW. The administrations of the Yuzhteploenergomontazh, Energoyuzhmontazh, and Energovysotspetsstroy trusts, as well as others, are fulfilling their assignments well ahead of schedule. The diligent labor of the Polessk atomic power station builders has been highly rated. They were the winners of the All-Union socialist competition and were awarded the

Challenge Red Banner of the CPSU Central Committee and the USSR Council of Ministers, the All-Union Central Trade Union Council and the Komsomol Central Committee. At a solemn ceremony the banner was given to the representatives of the administrations for the construction of the AES by the First Secretary of the Oblast Party Committee, T. I. Panasenko. [Text] [Kiev RABOCHAYA GAZETA in Russian 12 Mar 82 p 1] 8927

LEP-500 FOR PRIMORSKIY KRAY--Work on Primorskiy Kray's first LEP-500 between the Primorskaya GRES and the Dal'nevostochnaya substation in the south of the Primorskiy Kray has been completed well ahead of schedule. Yesterday the LEP was placed under full industrial load. This power transmission line has a length of nearly 350 kilometers; it crosses tayga, mountains and swamps. It will provide a reliable source of electricity to the rapidly developing machine building, metal working, wood processing, ship repair enterprises, and the transportation junctions of Vladivostok and Nakhodka. The supply of electricity for agricultural enterprises and private customers will be increased. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 17 Feb 82 p 1] 8927

ZAPOROZH'YE TRANSFORMER PLANT REPORT--The command "Lift" was heard. And using a giant crane a 44-meter steel column rose into the air. In Zaporozh'ye work got underway to install the lead building of a unique complex for the production of super-powerful transformers. This complex will manufacture equipment for the 1,150 kV alternating current LEPs and the 1,500 kV direct current LEPs. Decisions of the 26th Party Congress were directed at significantly increasing the production of this equipment. The scientific-technical problem of organizing such an undertaking was solved in the Soviet Union for the first time in world practice. The giant electrical equipment which is manufactured by the Zaporozhtransformator Association has a rated capacity of 2,000,000 kW-amperes; the transformers will help to perform an important national economic task in the power unit - to create a power bridge between Siberia and the Center. The construction of the complex has been entrusted to the collective of Dneprostroy. In competing to start-up this key project ahead of schedule, the builders are working rapidly to prepare the installation of the foundations. But this is an important and complex matter: the foundations are a complicated engineering structure requiring exactness on the part of the builders. Nearly one month ahead of schedule the brigade of A. F. Khamuly, a delegate to the 26th Party Congress, is now driving a 30-meter piling beneath the foundation. As in the modernization of the Dneproges, the Komsomol brigade of concrete workers headed by A. Krivopishchenko is working diligently. "To start a large construction project is always a difficult thing," says the chief of the administration of Dneprostroy, Hero of Socialist Labor B. T. Kuz'menko. "To successfully overcome difficulties during the organizational period we have been greatly helped by the experience that we gained in the construction of Dneproges-2. At the complex we are adopting progressive methods of work, used for the first time on a large scale during

the modernization of the legendary electric power station. One of these methods is the comprehensive mechanized flow line, in which specialized brigades of subcontractors work according to a unified schedule." This year the Dneprostroy workers have pledged to assimilate nearly 10 million rubles in capital investments on this key project. By the year 1984 the complex will deliver the first super transformer for the power transmission line between Ekibastuz and the Center. The completion of the first section of this line was called for in the Basic directions for the economic and social development of the USSR. /Text/ /Kiev RABOCHAYA GAZETA in Russian 12 Mar 82 p 1/
8927

CSO: 1822/158

SEPARATE PIPELINE SHIPMENT OF OIL BY SULFUR CONTENT MASTERED

Moscow IZVESTIYA in Russian 7 May 82 p 3

[Article by L. Levitskiy (Tomsk): "The Standard Bearer of Siberian Oil Pipelines"]

[Text] For the first time in the country the separate delivery of oil as a function of its sulfur content has been mastered.

Petrochemical workers need very badly raw material with a sulfur content as low as possible. Sulfur puts equipment out of operation, complicates production processes, and reduces product quality. It is necessary to go to great additional expense to get rid of the harmful impurities. That is why there is a special demand for low-sulfur crude. And it exists at many West Siberian fields. Unfortunately, during transport, raw materials of varying properties are mixed. The collective of the administration of Central Siberian trunk oil pipelines found a method for moving the liquid fuel by portions, depending upon its grade and composition. Scientists of the Tomsk Scientific-Research Institute for Nuclear Physics, which created an original instrument for rapid analysis of raw-material quality, helped it.

Right now low-sulfur crude is being pumped into pipelines, and instruments strictly close off and monitor its limits. After that, ordinary fuel passes at once, without interruption. Obviously, almost jewelers' precision is necessary, so that the target restrictions are maintained irreproachably over thousands of kilometers. The instruments and automation and remote-control devices are reliable sentinels.

The new technology was mastered for the first time on the Aleksandrovskoye-Tomsk-Anzhero-Sudzhensk oil pipelines. The pipeline workers of other areas have taken up the Tomsk workers' relay baton.

For a decade the operators of one of Siberia's giant fuel arteries observed this success. The Aleksandrovskoye-Tomsk-Anzhero-Sudzhenko oil pipeline, which is more than 800 km long, was the first in the world to be welded of 1,220-mm diameter pipe. CPSU Central Committee General Secretary Leonid Il'ich Brezhnev then warmly congratulated the builders for introducing this specially built trunk line ahead of schedule and wished that it be quickly brought up to its design capacity. The injunction was fulfilled with honor. The arterial has deservedly become for Siberians a school of advanced experience that is widely used for the laying of still larger arterials.

Many organizational and technical innovations have been tested for the first time here. The underwater welding of pipe, effective methods for cleaning pipelines, electronic instruments instead of human inspectors, an automated system for controlling all processes--this is a short list of the technical achievements. For the first time in the country the rotating-personnel method of servicing oil pump stations was used, saving about 30 million rubles. In 10 years the oil pipeline gave the national economy more than 400 million rubles of profit. All the expenditures on its construction and operation have been fully recuperated.

Mastering the selective pumping of crude as a function of its composition is one of the items of the high socialist commitments. The new technology has been introduced. A pipeline from the group of Vasyugansk taiga fields, whose oil is marked by very high quality, also has been converted to it. In all the administration's collectives, the results of the socialist competition that is being promoted are summed up daily. The Aleksandrovskaya oil pump station is in the lead. It is to turn over tens of thousands of tons of Siberian fuel above the task.

11409
CSO: 1822/161

ERECTION OF COMPRESSOR STATIONS ON GAS PIPELINES MUST BE SPEEDED UP

Magnitude of Task

Moscow STROITEL'NAYA GAZETA in Russian 28 Mar 82 p 1

[Text] In order to deliver gas over vast expanses to the places of consumption, high pressure must be obtained inside the pipelines. It is for this purpose that we build compressor stations (KS's). The distance between them on gas pipeline routes is about 100-150 km.

Gas turbines, which the builders rightly name the heart of the facility, are usually installed at the compressor stations. The turbine drives the pump that actually moves the gas forward. At each KS, 6-9 turbine-driven compressors with capacities of up to 10 mw per unit are installed.

The total power of the gas-compressor stations that must be put into operation during the 11th Five-Year Plan exceeds 20 million kw.

The task that faces the builders is not a simple one. The more so since many KS's are to be introduced more rapidly than specified by the standard construction times for such facilities. The timely introduction into operation of the Novyy Urengoy-Central Economic Region gas-transport system and of an export strand of gas pipeline depends upon the performance of this task.

So we tell the reader about the problems of erecting the compressor stations in the collection of information that is offered here.

Work Status Summarized

Moscow STROITEL'NAYA GAZETA in Russian 28 Mar 82 p 1

[Article: "V. Nazarov's Collective Is Ahead"]

Construction of the Urengoy-Novopskov Gas Pipeline
Progress of the Work on 28 March (in kilometers)

Subunits	Task left to complete project	Insulation	Laying
Glavsibtruboprovodstroy	854	305	549
Glavvostoktruboprovodstroy	1,115	335	780
Glavtruboprovodstroy	965	495	470
Glavukrneftegazstroy	166	11	155

Subunits	Task left to complete project	Insulation	Laying
Glavyuzhtruboprovodstroy	187	41	96
Soyuzintergaz	101	65	36
Mingazprom	(5 km--crossing of the Volga Reservoir has been completed)		
Total	3,343	1,252	2,086

Explanation of the Summary

On the Urengoy-Novopskov gas pipeline, 623 km remain to be rotary welded, but the gap between the length of the pipeline welded into the strand and that laid in the ditch still has not been reduced.

However, last week the average daily pace of laying the pipeline reached 30 km. This is for the present a record for output. The builders are confident that, if weather permits, this will be raised--to laying 1,000 km of pipe in a month. Individual collectives, particularly Soyuzgazspetsstroy [All-Union Trust for the Construction of Special Gas Enterprise Facilities] of Glavtruboprovodstroy, Soyuzintergazstroy and others are finishing the linear work and are beginning preparations for blowing through and testing the gas pipeline on their sections.

During the preceding week, first place in the competition among the collectives of the flow-line operating groups was awarded to V. Nazarov's flow-line group from Mosgazprovodstroy [Trust for Gas Pipeline Construction in Moscow].

Novokazymskaya Station Completed Early

Moscow STROITEL'NAYA GAZETA in Russian 28 Mar 82 p 1

[Article by A. Zhdanov (Tyumenskaya Oblast): "Three Times as Rapidly"]

[Text] Erection of the Novokazymskaya Compressor Station on the Urengoy-Petrovsk gas pipeline was completed in one-third the standard time, on the eve of the opening of the 17th USSR Trade Unions Congress. In the specialists' opinion, the success was provided by:

1. The Combined Flow-Line Group Method

V. Morokhovets, chief engineer of Kazymgazpromstroy [Kazym Trust for the Construction of Gas Industry Enterprises]:

"The standard period for erecting a compressor station of this type is 24 months. The Novokazymskaya station was erected in 8 months.

"The pace was accelerated thanks to introduction of the combined flow-line method of organizing construction. Its essence is the presentation of a broad front at once to many interdependent workers and simultaneous performance of several operations. With an estimated cost of about 9 million rubles for erecting the station, 700,000 rubles were saved."

2. A Strenuous Schedule

V. Arabadzhi, brigade leader of SU-35 [Construction Administration No 35] of Kazymgazpromstroy:

"We had one crane and it was needed by many interdependent workers. Its work was scheduled literally by the minute. And not just the crane. The strenuous operating schedule of the flow-line method raised production discipline and forced all collectives participating in erecting the compressor station to prize each minute of worktime.

"The fact that many of our workers possess several related specialties played a major role in successful fulfillment of the tasks."

3. "The Workers' Relay"

Ye. Dobrosmyslov, secretary of the party committee of Kazymgazpromstroy:

"Collectives of the Sibkomplektmontazh and Tyumentransgaz Associations, Tyumenneftegazmontazh Trust, vehicle drivers, river workers and equipment suppliers adopted the 'Workers' Relay' during construction of the compressor station. An agreement on integrated competition under the 'Workers' Relay' principle was approved by the Tyumenskaya Oblast Committee of the party, and it was reinforced by concrete engineering and ideological measures."

N. Kurbatov, chief of Glavsibtruboprovodstroy [Main Administration for Pipeline Construction in Siberia], sums up the results:

"Accelerated introduction of the KS enabled the 800-km section of the gas pipeline to Petrovsk to be tested without involving the capacity of the operating strand at Gryazovets. Fuel flowed to the customers without interruption.

"According to our calculations, the prescheduled introduction of the compressor station means about 20 million m^3 of gas above the plan."

Republic, Oblast Organizations Help

Moscow STROITEL'NAYA GAZETA in Russian 28 Mar 82 p 1

[Article: "Without Compressor Stations There Is No Line"]

[Text] Speed up construction of most important facilities on the gas pipeline routes.

The trunk gas pipelines that have their start at Urengoy stretch to our country's western frontiers. Help for the builders is being organized in the republics and oblasts.

They are sponsoring:

Permskaya Oblast. The Permskaya Oblast CPSU Committee has developed a detailed plan of measures.

The staff is working actively to extend help to the line workers through the Gornozavodskiy Rayon CPSU Committee. It held a meeting directly at the Gornozavodskaya station, which is due for early startup but whose erection had lagged. Right now hundreds of construction workers, as well as high-powered equipment, have been concentrated at the construction site. Operations at the KS [compressor station] are close to completion.

In Berezovskiy Rayon, Novosibirsktruboprovodstroy [Novosibirsk Pipeline Construction Trust] was given help in hauling reinforced-concrete anchor weights to the route.

Ukrainian SSR. On the Urengoy-Uzhgorod route, Vinnitspromstroy [Vinnitsa Industrial Construction Combine] and Cherkaspromstroy Combine should build two compressor stations--the Il'intsovskaya and the Sofiyevskaya.

Republic and oblast party organizations and UkSSR Minpromstroy [Ministry of Industrial Construction] are doing everything necessary to introduce these important gas pipeline facilities on time.

Help has been extended to the builders in organizing the expeditionary rotating-personnel method of erecting KS's, introduction of the outfitted-module method of erecting the equipment, and the use of lightweight metal constructional structure fully prepared at the factory.

Working, Living Conditions

Moscow STROITEL'NAYA GAZETA in Russian 28 Mar 82 p 1

[Article by A. Serbinov, holder of the Order of Labor Red Banner and brigade leader of Vostokmetallurgmontazh (Krasnotur'insk, Sverdlovskaya Oblast): "When We Are on Rotating Duty"]

> [Text] Concrete concern about the concrete person, his needs and requirements is the initial and the final point of our economic policy. That is why such great attention was paid at the 17th USSR Trade Unions Congress to concern about the man of work.
>
> Unfortunately, the possibilities associated with improving people's working and living conditions still are not being realized to the utmost. For example, it is very difficult today to acquire labor resources for erecting trunk gas pipelines, since not enough of the amenities have been built for the workers.

We are erectors, and that means that we spend a major portion of worktime away on the job. On the short days off we meet at the administration or trust and exchange opinions. I shall speak frankly: no one complains about the hardness of the work. We are provided with machinery. At our Krasnotur'inskaya KS [compressor station], the prime contractor, Uralenergostroy [Trust for the Construction of Power-Engineering Facilities in the Urals Economic Region], has given us a broad work front on time, but it has not been possible to avoid losses.

We came to the construction project at the beginning of the year. We lived in the construction administration's recreation room--16 men in one room. It was uncomfortable and cold. The sending of people to the facility was poorly arranged. There are also losses from this. Add to this unjustified squandering of worktime for eating: for 2½ months we rode several kilometers into town. More frequently than not it was in an open vehicle, wasting 1½ to 2 hours.

We understand that it is difficult to arrange living conditions quickly, especially in the thinly populated regions of the northern Urals. During construction of the Pelymskaya gas compressor station, for instance, the builders had absolutely no fixed housing at all.

But the fact that gas compressor stations would be built in these places was known long ago. Back in the spring, the brigade leader, M. Petrusev, of the Sverdlovsk Installing Administration No 1 of Uralmetallurgmontazh Trust wrote in an article, "The Target Is at Idel'," which was published in STROITEL'NAYA GAZETA, that the trust's supervisors did not pay proper attention to preparing living conditions for the builders of the most important facilities on the route. At that same Idel'skaya KS, there was no drinking water in the brigade's mobile housing for a long time. People rode with teapots and cans for it...on 12-ton dump trucks, for many kilometers. Nothing was done about the problem.

The Urengoy-Petrovsk gas pipeline, as with other facilities of the gas-transporting system, is the central construction project of the 11th Five-Year Plan. That means that the attitude toward it must be commensurate. Glavsreduralstroy, for example, is creating at Ivdel'skaya station a construction workers' settlement for 450 people. It is erecting housing from container modules, which are made at Stroydetal' Trust No 70 plants. It prepared and hooked up electric-power, water and sewer lines--and the dormitory was ready. A room for two people. There are cupboards for clothing, and each container module has a kitchen. There will be a dining room, a store, a club and a bath in the settlement. Unfortunately, no one else has any more such settlements yet in the Urals. True, we live not far from Krasnotur'insk. The town's party committee and the executive committee are helping us. But it is not within the power of one small town to solve all the problems.

Right now there are not many more than 100 erectors at our construction project, but in April there should be about 400. Where will they be put and fed when they are sent to the construction project? That is why the help of oblast organizations, the prime contractor and the supervisors of all subunits that are participating in the erection of the gas compressor station is needed. The concern about people, as was emphasized at the 17th USSR Congress of Trade Unions, is a common concern.

Recently we finally opened a dining room at the site. The store began to operate. But the dining room was designed to seat 40, and there were more than 1,000 workers here. The difficulties are increasing.

For construction of the Pelymskaya station, there are new buses that were assembled at the Urals Motor-Vehicle Center. They are very convenient, and the body is heated inside. But our industry produces few of these buses. At a conference in Krasnotur'insk, Deputy USSR Minister of Construction of Petroleum and Gas Industry Enterprises A. Vesel'yev said that the plant in Nizhnekamsk that produces such rotating-personnel vehicles is being built slowly, and its capacity is being assimilated even worse than that. Meanwhile, such vehicles are badly needed in the northern environment.

I have been working at Urals construction projects for 35 years, 25 of them as a brigade leader. I always recall with satisfaction the erection of the asbestos combine in Orenburgskaya Oblast. There we never experienced difficulties in traveling from the settlement to the construction job site. All the buses stopped at the workers' dormitories in the morning. After the shift, not one vehicle left without the permission of the dispatcher, who knew each organization and when it finished work. For it was often impossible for the builders or installers to get off at the designated hour.

Unfortunately, there is no such procedure during construction of the gas compressor: if you are delayed--you catch it in the city as best you can. And indeed, no great efforts are required to solve this problem.

The construction workers are confidently picking up the pace at all the gas compressor sites of the northern Urals. We do not let people down, we turn jobs over at the appointed time. For their part, supervisors of construction organizations, and also of oblast and city party, soviet and trade-union organizations, should take all the necessary measures to insure that the workers have good living conditions. The decisions of the 17th Congress of USSR Trade Unions obliges them to do this.

Late Equipment Deliveries

Moscow STROITEL'NAYA GAZETA in Russian 28 Mar 82 p 1

[Letter by V. Parshin and V. Melikhov, brigade leaders of Lipetsk Installing Administration No 2 of Metallurgprokatmontazh Trust, and responding comment by P. Alekhin, deputy chief of Glavuprkhimprommontazh of USSR Minmontazhspetsstroy [Ministry of Installation and Special Construction Work]: "Blind Alley at the Flag Stop"]

[Text] "Our installing administration has been charged with erecting a compressor station close to Yelets. Together with a collective of the Lipetsk Construction Trust, we undertook a commitment to turn the KS [compressor station] over half a year early--in June of this year.

"The builders presented us with a work front 2 months ago, but it was impossible to do the installing work. In January-February not one ruble of investment had been assimilated. The Mingazprom [Ministry of Gas Industry] client is delaying. It still has not arranged for the delivery of the equipment to the construction project. Only 10 units of equipment have arrived, out of the 282 units agreed upon, at the Pazhen' flag stop, which is several kilometers from the job. Thus it is that we turn out to be in an unusual blind alley.

"V. Parshin and
V. Melikhov,
brigade leaders of Lipetsk Installing Administration No 2 of Metallurgprokatmontazhstroy Trust"

P. Alekhin, deputy chief of Glavuprkhimprommontazh of Minmontazhspetsstroy comments on the letter at the request of the editorial board:

"USSR Minmontazhspetsstroy has been given the task of installing the equipment at 123 gas compressor stations, 9 of which must be put into operation this year. The task is not easy.

"The USSR Minmontazhspetsstroy board has repeatedly reviewed the question about progress in erecting compressor stations and it has noted with anxiety that the prevailing situation does not meet today's needs. The delivery of the equipment, pipe, flanges, adapters and taps is delaying the deployment of the main forces of the installers. Later we shall have to make up for what has been neglected and intensify the operating schedule, for mere months remain prior to the startup of several stations, according to the schedule.

"The prime contractors of four ministries are treating start of the facilities' erection somewhat differently. While, for example, USSR Minenergo [Ministry of Power and Electrification] subunits are actively engaged in preparing a backlog of construction starts--and the work front for the installers is practically ready, at the Krasnotur'inskaya, Syzranskaya and Minskaya stations USSR Mintyazhstroy [Ministry of Construction of Heavy Industry Enterprises] and USSR Minstroy [Ministry of Construction] are in great arrears to our brigades. Fulfillment of the approved measures is being delayed from month to month.

"The anxious message to the editorial office impels us to carefully check, again and again, the whole chain of mutual relationships of the construction participants. The principle of the 'Workers' Relay' must be promoted widely during erection of the compressor stations."

Concluding Remarks

Moscow STROITEL'NAYA GAZETA in Russian 28 Mar 82 p 1

[By the Industrial Construction Division of STROITEL'NAYA GAZETA]

[Text] It is not accidental that the compressor stations are called the pulse of the line. Without them the gas pipeline is simply a multikilometer-long pipe. Thus, on the Urengoy-Petrovsk route the linear part has now been finished, but not all the KS's [compressor stations] have been put into operation. Therefore, it is impossible to complete tests of the gas pipeline and turn it over for operation.

Today, accelerated erection of the compressor stations is the main problem of developing the gas-transporting system. On the three Urengoy-Petrovsk, Urengoy-Novopskov and Urengoy-Uzhgorod trunk gas pipelines alone, more than 100 KS's should operate. The majority of them still need to be introduced.

As is evident from the information in the selection of articles, innovators and advanced production workers have appeared during erection of the compressor stations. The bases of their success are progressive methods and ways for working, precise organization of the supplying of materials and equipment, and the introduction of effective socialist competition. It is these components that will allow the standard period for introducing the Novokazymskaya KS into operation to be half as long as the standard.

Unfortunately, not by far are all the builders working as precisely and competently as the Kazymgazstroy Trust collective. For example, during erection of the

Tol'yattinskaya and Pavlovskaya stations, a serious lag behind the schedule was permitted only because Kuybyshevtruboprovodstroy [Kuybyshev Pipeline Construction Trust] of Privolzhskgazpromstroy [Volga Association for the Construction of Gas Industry] facilities, which were due for early startup, and they are not paying enough attention to raising labor productivity.

There are also other factors that hamper construction of the KS's. Chief among them is the nonfulfillment of contractual commitments. From this comes late presentation of the work front, delay in equipment deliveries, and a lack of coordination of actions.

One cannot help but agree with P. Alekhin, deputy chief of Glavuprkhimprommontazh of USSR Minmontazhspetsstroy, that wide dissemination of integrated competition of interdependent workers at the job sites will help to eliminate much of the confusion. We would like to remind all participants in the construction of the KS's that the initiative in organizing the "Workers' Relay" should proceed precisely from this.

This year the boards of most of the ministries that are erecting compressor stations have reviewed the progress of their construction. Specific measures have been planned for overcoming the delays that have been permitted. The job now is to implement them as quickly as possible.

11409
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PIPELINE CONSTRUCTION PROGRESS IN UFA AREA DESCRIBED

Moscow IZVESTIYA in Russian 29 Apr 82 p 1

[Article by A. Zinov'yev (Ufa): "220,000 Kilometers Under the Ground"]

[Text] This is just what the Soviet Union's system of trunk pipelines is like today.

Think about this figure, dear reader! Such a majestic scale of work is unprecedented. In just a few years a new branch of the economy--modern highly economical automated pipeline transport--has been created. The length of all the country's oil and gas arterials laid in the ground is more than 5-fold that of the earth s Equator.

Armed with powerful, highly productive equipment and with material and labor resources concentrated at the decisive operating sections, the pipeline builders have showed persuasively how great are the advantages of the planned socialist system of management, and what remarkable achievements are embodied in the labor enthusiasm of the Soviet people, who are carrying out the designs of the Leninist Communist Party.

In accordance with 26th CPSU Congress decisions, pipeline construction during the 11th Five-Year Plan will be 1.5-fold that of the 10th Five-Year Plan. And this program will be implemented successfully.

Here is a current summary of USSR Minneftegazstroy [Ministry of Construction of Petroleum and Gas Industry Enterprises]: on the eve of the 1st of May, the 10,662d kilometer of trunk pipeline will have been put into operation since the start of the five-year plan. Work is going on full blast at this central construction project of the five-year plan, which is what the people have truly named the laying of six specially built trunk lines from West Siberia to the Central Economic Region, and also to Western Europe. Large-diameter pipe will be laid across 28 oblasts and autonomous republics of the RSFSR, the Ukraine and Belorussia.

The construction of this system of trunk lines will exceed in scope of work and amount of capital investment the BAM

> [Baykal-Amur Mainline], KamAZ [the Kama Motor-Vehicle Plant], VAZ [the Volga Motor-Vehicle Plant] and Atommash all put together.
>
> Truly it is the great construction project of our time!
>
> Reequipping and the introduction of progressive methods of performing the work--these are the main reserves of the pipeline builders. The CPSU Central Committee paid special attention to this in its recent decree about the work of the Ministry of Construction of Petroleum and Gas Industry enterprises.

On the schematic map of the route that hangs in the office of flow-line operations group chief F. Maksyutov, rivers, ravines, swamps and forests--everything that the pipeline workers will conquer on their 55-km section of the line--is designated by conventional signs. Right away one can see what they have to do here.

"Yes, it is not easy," says Franis Sulitanovich. "You come up out of one ravine and then you drop down into another. And after that it is either a swamp that does not freeze through in the winter, and it shakes under you, or there is still another stream, which, though it is a small one, presents its own difficulty."

Then we went with him along the route for many kilometers. Our ZIL-131, driven by experienced driver Ivan Gvozdikov, cannot get out of all the ravines by itself, so some drivers prefer to go around, seeking more moderate ups and downs. But the ditch, meanwhile, without turning, goes now down, now up, and the strand of pipeline ready for insulation winds alongside it.

The earthmovers go ahead of everyone: with high-powered bulldozers and excavators they hack through the taiga, they clear the cutting in the forest, prepare access roads, and dig the ditch.

Much depends upon the earthmovers. For example, whether the bend of the pipe will be sharp or gentle for descents and rises when crossing ravines depends upon them. If it is sharp, then the erectors who follow will have to make inserts, or so-called "sags" at the gaps, and to erect pipe with small individual pieces, which later complicates the insulating process, and in such places the measured pace of the pipeline insulating and laying column slips--and as a result each ravine takes 2 or 3 additional days. Where there are smooth dips and rises, it is sufficient to insert into the pipelength one or two curved pipes that are bent on a special machine, and it is no longer necessary to make fractional inserts. But for this purpose, one must not be lazy when digging the ditch.

"We strive to insure a rapid pace for the erectors and insulators," says chief of the earthmoving section Zul'fat Sadykov. "Thus during the last 2 weeks we have passed through 7 ravines, all without a single 'sag.' Our bulldozer operators M. Aminev and R. Rakhimov and excavator operators N. Gerasimov, A. Pogorelets, Kh. Nafikov and Yu. Shungurov, who are great experts, smooth out the steepest inclines of the ravines."

This spectacle is impressive: a column of pipelayers, which hold the weight of the multiton strand, moves smoothly and persistently, cleaning and insulating it and laying it in the ditch. There is a short conversation with the column chief, R. Ramazonov. Despite his youth, he has had much experience in his complicated and difficult job: he has built two strands of the Surgut-Polotsk oil pipeline and the strand of the Urengoy-Petrovsk gas pipeline. He has chosen reliable people for his column: both the pipeline-layer operators and the reel operators. The column's pace is 1,200 meters per shift.

"We are thinking about bringing it up to 1½ km," says the column chief. "Now we have to just conquer this strip of ravines, and then we will get a smooth place."

Taking advantage of a stoppage, Ramazanov once more discussed with each of the operators their actions at the next descent, which was being started, and once more they all went there together. And soon the column of high-powered machines again had started up, and, with a measured and smooth pace, they raised and lowered the whole gigantic strand of pipeline.

Trucks droned from morning to night on the approaches to the route, providing a high-capacity flow of freight that was being sent to the builders and erectors. You can't get along here without trucks: they haul pipe and welded pipelengths, and they deliver tractors, mobile housing, fuel and lubricants, and various items of equipment to the most remote places.

The drivers do shock work, especially before the spring floods. Thus the collective of Motor Pool No 8 had to haul 22 km of pipe from the Udel'no-Duvan' dock in Birskiy Rayon and 13 km of pipe from Krasnyy Klyuch, Nurimanovskiy Rayon, out to the Bashkiria segment of the route, to deliver 25 km of pipe sections to the segment, and also to extend assistance to SMU [Construction and Installing Administration] No 5 of Nefteprovodmontazh [Pipeline Erecting Trust] in the exportation of tens of kilometers of separate pieces of pipe from the Saygatka Railroad Yard of Permskaya Oblast to an intermediate base of the Urengoy-Uzhgorod gas pipeline. And the transport workers coped with this task successfully. Thanks to precision organization of the work on the route and to reliable repair services, the productivity of the pipe haulers of the motor pool was 1.6-fold higher than the USSR Minneftegazstroy average.

The route hardens people, and they grow, along with the construction project. Hero of Socialist Labor A. Khaliullin supervised one of the flow-line groups of the Vostoknefteprovodstroy [Pipeline Construction Trust of the Eastern Economic Region] during erection of the Urengoy-Petrovsk trunk gas pipeline. This collective has several times been the winner in the competition throughout Minneftegazstroy. Constant study and improvement of methods for organizing the work that will yield the greatest effectiveness at least cost in labor and time, strong labor discipline, and the integrated conduct of all types of work with high quality, helped it. And, of course, high skill, selflessness and constant mutual support. On the Urengoy-Novopskov route A. Khaliullin now organizes the work as a deputy chief of Administration No 3 of Vostoknefteprovodstroy. And a former column chief of his flow-line group R. Fayzullin, was now in charge of an erecting section that is doing work in Permskaya Oblast.

"People supplied with modern high-powered equipment decide the success of the work on the route," says A. Khaliullin. "We have such equipment in the full amount for organizing and conducting continuous, flow-line type operations by the main operating columns. Gentlemen beyond the ocean have been trying in vain to impose conditions on us, breaking trade contacts with our country. Soviet machinebuilders have created powerful pipeline layers based on the TT-330 tractor. Pipelaying giants made in Sterlitamak have passed their first tests on the Urengoy-Petrovsk trunk gas pipeline route."

The same kind judgments about these machines have been heard also from many other pipeline workers. Everywhere great interest is being displayed in the Sterlitamak machinebuilders' work, thoughts are being expressed about the design solutions for the various components, and people are asking when capacity will be built to increase output of the giants for the taiga pipeline routes. We visited the place where they were born--Sterlitamak's Stroymash plant. The plant's chief designer, M. Yudayev, pointing to photographs of these firstlings, says:

"The first test model of the domestic taiga pipelayer was built in 1977. During its tests the design for tooling the machine was improved, and its technical characteristics were bettered."

The improved pipelayer successfully passed state operating tests on northern routes in the insulating and laying columns. The first, second and third were set up successively at other places, but, whatever the number, it displayed enviable stability, it was responsive to control, and it entered well into the overall assemblage of machinery. The TG-502 proved to be more convenient and easier to control than similar American-made units.

In the document that accepted the test model, members of the state commission--representatives of Minsel'khozmash [Ministry of Tractor and Agricultural Machine Building], Minstroydormash [Ministry of Construction, Road and Municipal Machine Building], and Minneftegazstroy, reported that the TG-502 pipelayer corresponds to the highest quality category for the indicated parameters of its technical specifications and design solutions: it recommended series production of the TG-502 and certified it to be in the highest quality category.

In 1980 Sterlitamak assembled and sent 26 machines to the underground trunk gas pipeline builders, and the next year 115 of the giants of the taiga routes were produced. At the end of 1981 production space that will enable the output of 250 machines per year will go into operation at the plant. According to the standards, up to 1½ years are allowed for assimilating this capacity. The situation imposes its own deadlines. The pipelayers are urgently needed for erecting gas trunk lines. Therefore, the construction-machinery manufacturers have worked out and are implementing measures for accelerated assimilation of the new space. And now in 1982, 250 pipelayers will be built.

M. Yudayev tells us that the designers are working right now to simplify the hydraulic system, lengthen the boom by 1 meter, and increase lifting and lowering speeds. All this should improve the machine's operating qualities. The construction machinery makers have established technical servicing centers for their pipelayers on the routes, at Nadym, Ufa and Penza. Their mission is to perfect the design for its manufacturability. Right now 30 of the domestically made pipeline layers are working on the Bashkiria section of the Urengoy-Novopskov arterial.

"And they are working well," says deputy chief of Glavvostoktruboprovodstroy [Main Administration for Pipeline Construction in the Eastern Economic Region] Ye. Lavrent'yev. "In the name of the route workers, I would like to express great gratitude to their creators and to wish them successes in increasing the output of these machines and in further improving them."

Yevgeniy Aleksandrovich also stated that 15 flow-line groups have been established within the main administration for erecting arterials. They have been provided with adequate amounts of the necessary equipment. The pipeline workers' living conditions have been greatly improved. Forty buses recently arrived for the pipeline-route workers who are on rotating duty. Warm railcar housing, dining cars, stores and recreation rooms have been placed at their service in the housing settlements, and they have been provided with television sets, transistor radios and periodicals. We visited these settlements: actually, they have everything for full-fledged recreation after their difficult rotation duties.

"Each of those who works on the route understands well what enormous responsibility has been vested in them, the trunk gas pipeline builders," noted Ye. Lavrent'yev. "And each strives to do everything to justify this high trust, to put the gas pipeline into operation ahead of time, thereby placing the riches of Urengoy at the national economy's service. We are confident that we shall fulfill our obligation: we shall complete erection of the linear portion of our section of the Urengoy-Novopskov arterial, which goes through Tyumenskaya, Sverdlovskaya and Permskaya Oblasts and the Bashkirskaya ASSR, 2 or 3 months ahead of schedule--in September or October of 1982."

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GAS PIPELINE CONSTRUCTION PROGRESS IN SVERDLOVSKAYA OBLAST REPORTED

Moscow EKONOMICHESKAYA GAZETA in Russian No 13, Mar 82 p 9

[Article by M. Makhlin (Sverdlovskaya Oblast): "The Urals Leg"]

> [Text] At a section for building the Urengoy-Central Economic Region trunk gas pipeline in Sverdlovskaya Oblast.
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> A hurriedly arranged All-Union briefing of journalists that was dedicated to construction of the Urengoy-Central Economic Region gas pipeline system and the Urengoy-Uzhgorod export gas pipeline has been held in Krasnotur'insk, Sverdlovskaya Oblast. Participating in it were workers of the central press, and also the republic and oblast presses of the regions through which the route will pass. The deputy ministers of the gas industry S. S. Kashirov and construction of petroleum and gas industry enterprises A. P. Vesel'yev spoke to the journalists and answered their questions. They noted that, thanks to the socialist competition that was being widely promoted, the prerequisites had been created for introducing the five underground trunk lines with a total length of about 20,000 km ahead of time, during the 11th Five-Year Plan. The gas pipelines will be brought up to design capacity in the year of their startup, instead of in the third year of their assimilation.
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> The journalists visited facilities of the Urengoy-Petrovsk gas pipeline, which is being introduced this year, and they met with the builders. Manager of the Propaganda Section of the CPSU Central Committee I. A. Zubkov took part in the briefing's work.

Four strands of the Urengoy-Central Economic Region gas pipeline and the export trunk pipeline to Uzhgorod will pass through the north of Sverdlovskaya Oblast in a single "corridor" during the 11th Five-Year Plan. The distance between the lines will be some tens of meters. The advantage here is obvious. The builders have been enabled to concentrate their forces in comparatively small areas, taking into account the prospects for creating stable worker collectives at sections that have been allocated. The compressor stations also are being placed in proximity to each other, enabling them to be operated at least expense and the personnel requirement to be reduced.

The arterials are compared to rivers, not without reason. A 1420-mm diameter gas pipeline moves 32 billion m^3 of the "blue fuel" per year under a pressure of 75 atmospheres. In power potential this is equivalent to the annual generation of electricity of all the hydroelectric power stations of the Angara-Yenisey cascade.

Pipelines of this diameter have been laid in our country for 10 years now. Soviet scientists, designers and builders have emerged in this matter as pioneers, having opened up a new page in world pipeline-construction practice. Let us note that across the ocean they are only starting to realize one project that is comparable in scale to what has already been accomplished in the USSR.

Every 100 km the next compressor station (KS) gives impetus to the flow. Over 100 km the pressure weakens by 20 atmospheres. At the KS it is raised up again to the required level. At the stations, which were designed by YuzhNIIgiprogaz [Southern Scientific-Research and Design Institute for the Design of Gas-Industry Facilities] (Donetsk), 8 turbines with a capacity of 10,000 kw each are being installed. Twenty KS's with a total capacity of 1.6 million kw, the equal of two Dneproges's [Dneprovskaya Hydroelectric Power Station imeni V. I. Lenin], are to be erected on the Urals leg of the trunk gas pipeline network.

In the north of Sverdlovskaya Oblast four KS's are being readied for introduction in April-June--the Pelymskaya, the Ivdel'skaya, the Krasnotur'inskaya and the Lyalinskaya. I managed to visit three of them.

The Pelymskaya

These were fine March days. Under the sun's rays, especially blinding amid the snow, the thermometer's column went no lower than -28 degrees. For the builders of the Pelymskaya KS, who are accustomed to -40 degree cold and violent snowstorms, such a temperature, especially without a wind, seemed to be a true sign of spring. At the site hot work was boiling.

Last year the SMU-2 [Construction and Installing Administration] collective of Komsomol'sktruboprovodstroy [Komsomol'sk Pipeline Construction Trust] from Tyumenskaya Oblast arrived in the taiga, close to Pelym settlement. It was not easy to become accustomed to the new place, far from the main base. The current winter turned out to be severe.

"From March to the end of the year our collective, then small in numbers, did little more than half a million rubles' worth of work," said SMU-2 chief A. Tsyba, "much less than planned. Reinforcements of people and equipment were received recently. The monthly program has crossed the million-ruble threshold. We are counting on making up in the near future for what had been neglected, so that in the first half of the year the KS units will be turned over for operation precisely on time."

Here in Pelym, incidentally, as at other northern points on the route, one feels especially severely how difficult and costly it is to deliver the gas, which is customarily thought of as a cheap fuel, and, alas, not to be conserved, at home or in production. Gasfield workers and pipeline builders know the real price of their product. Therefore, each KS is being equipped with recovery boilers, which will permit waste heat to be used for heating premises. A strict regime for saving material resources has become a law for the construction project.

At Pelym, for example, the integrated brigades of A. Buravilin and R. Khalilulov have committed themselves to reducing the cost of the work charged to them by a whole percent. For this purpose, they have each planned to save 3-4 tons of metal, 250 kg of electrodes, 15 tons of fuel, 10 tons of cement, 3,500 kw-hr of electricity and much lumber, propane and oxygen.

"Another augmentation should arrive soon. We want to show the newcomers an example of a thrifty attitude toward the job," remarked A. Buravilin. "We save metal, thanks to rational layout work. Major reserves have been found in the welding operations."

The so-called pioneers' settlement was spread out close to the site: several tens of four-place "barrel" huts equipped with the required conveniences, including television. Unfortunately, the settlement's dining room is crowded, it is not always possible to buy necessities in the store, and the organization of leisure time is not up to the mark--I heard this from many construction workers. Minneftegazstroy [Ministry of Construction of Petroleum and Gas Industry Enterprises] should react in all earnestness to their just remarks. Moreover, in the words of Deputy Minister A. Vesel'yev, the output of mobile prefabricated premises for cultural and personal-amenity purposes, including sports complexes, has been arranged for the pipeline builders.

Ivdel'skaya

A subunit of Boksitstroy [Bauxite Construction Trust] and its subordinate organizations are building this compressor station. The KS is considered the most important construction project in Glavsreduralstroy [Main Administration for Construction in the Central Urals Economic Region]. A USSR Mintyazhstroy [Ministry of Construction of Heavy Industry Enterprises] order about starting its erection was dated July 1981. The deadline for startup was set for 29 April of this year. This is twice as rapid as the standard.

"The engineering level of the design that was received did not satisfy us, and the main administration's specialists proposed a number of improvements in the constructional portion," explained deputy chief of Glavsreduralstroy B. Furmanov. "We were able to execute a fully prefabricated variant for the KS's erection. Thus, footings were made from modules weighing up to 22 tons. Only the footings under the equipment were cast in place. The outfitted-module method was mastered with the help of Sibkomplektmontazh. I would like to call the attention of YuzhNIIgiprogaz designers to the need to consider more fully the possibilities of industrializing construction."

"We approached organization of the work from a fresh start," Boksitstroy manager V. Shtan' added to the conversation. "Right away we undertook to erect the KD's buildings, and then we were engaged in bringing in the utilities and service lines. As a result, it was possible to combine some operations. Both the builders and the equipment installers are working in parallel. Two and a half months were won this way. I will note especially the selfless labor of the young erectors from Uralstal'konstruktsiya [Association for the Erection of Steel Structure in the Urals Economic Region]. Over a period of 2-3 weeks they delivered the building's framework, although they had had to work on the high iron at -40 degrees, and under a burning wind."

Clad in lightweight sandwich-type panels, the KS building is still surrounded by the cranes' open-work structure. The mechanisms are used simultaneously by the builders and the erectors. The Ivdel'skaya KS will go into operation by the First of May. Experience in building it will be of advantage to Glavsreduralstroy collectives at other sites.

Krasnotur'inskaya

Installation of the turbine units at the Krasnotur'inskaya KS was commenced 100 days prior to the deadline for startup. The prime contractor--Serovenergostroy [Serov Power-Engineering Construction Administration] of Uralenergostroy [Urals Power-Engineering Trust]--opened up a broad front for operations by the equipment installers. The best forces of the Central Urals power-engineering builders are pulling together at the construction project.

"Representatives of 16 specialized USSR Minenergo [Ministry of Power and Electrification] and Vostokmetallurgmontazh [Trust for the Construction of Metallurgical Facilities in the Eastern Economic Region] organizations are working side by side with our collective," said Uralenergostroy deputy manager V. Popov. "The task being carried out is most complicated. Actually, we are reducing the erection time for the KS almost down to one-third of the standard. The concentration of forces at a limited area has required that the course of the work be organized in accordance with combined schedules and that competition of interdependent workers be arranged.

* * *

The task set for the builders of the trunk gas pipeline network is being fulfilled in a short time. Everywhere, at every section, the communists are in charge of the competition for accelerating the pace. At the KS construction projects, party organizations and temporary party groups, which unite all communists participating in the construction work, have been established. Enormous organizational work on the solidarity of the collectives and on mobilizing them for solving overall tasks was performed by the Sverdlovskaya Oblast CPSU Committee.

We visited the Urals leg of the Urengoy-Petrovsk route. Work on the Urengoy-Novopskov and Urengoy-Uzhgorod trunk pipelines is going on ahead of schedule. Here, as at the most recent strands of the system, advanced experience in reducing the construction time of the first gas-compressor station is advantageous. In all, more than 200 KS's will have to be introduced during the five-year plan. It is also important to draw conclusions from miscalculations and errors.

At some places, as experience indicates, it is desirable to start at once the erection of permanent settlements which, after serving the builders, will be transferred to the KS's operating personnel. The specifics of the rotating-personnel method, which is used at some construction sites, and the organization of ideological support of the project must be considered more fully. Incidentally, some collectives have begun the practice of sending letters of gratitude to the place of permanent residence of the best workers. This moral incentive measure has yielded a great educational benefit.

The pipeline builders are expecting Minelektrotekhprom [Ministry of Electrical Equipment Industry] to accelerate the series output of automatic welding sets. These units will increase labor productivity severalfold when large-diameter pipe is being welded. However, electrical-equipment industry enterprises are slow to master production of the equipment. USSR Minchermet [Ministry of Ferrous Metallurgy] and Minkhimprom [Ministry of Chemical Industry] have been called upon to arrange for the output of pipe that is insulated at the factory.

The builders themselves must be prepared to lay thicker pipelines, which are designed for a pressure of 100-120 atmospheres. Their throughput will be increased 1.5-fold. Test sections still are to be erected. Leningrad power-machine builders have already begun to manufacture the appropriate highly productive equipment. Conversion to the construction of gas pipelines of the new class is to be performed within the current five-year plan.

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PIPELINES

GAS PIPELINE CONSTRUCTION PROGRESS IN KURSK REGION DESCRIBED

Moscow IZVESTIYA in Russian 23 Apr 82 p 3

[Article by V. Kulagin (Kursk): "Work That Is a Song"]

[Text] The call from Kiev came at 0900 hours sharp. It had been planned to hold at 1500 hours a teleconference at the level of the deputy ministers of the leading branches. N. Khorev, chief of the Kursk Trunk Gas Pipeline Administration of the Order of Lenin Khar'kov Gas Transport Association notified the supervisors of all services over the central dispatching communications about the forthcoming conference on pipelines and immediately started to get ready to go to today's most important facility of the Yelets-Kursk gas pipeline--the Kursk Compressor Station. But Nikolay Antonovich had not managed to get up from the table when into his office came a stocky man of middle age, with weatherbeaten face and fixed stare. After putting his cap on the table, the arrival introduced himself:

"Ovchinnikov, chief of the Operations Section of the Shebelinka Motor Transport Enterprise of the All-Union Ukrgazprom [Ukrainian Gas Production Association].

And although N. Khorev was seeing this man for the first time and he was in a rush to get to the compressor station, he seated the visitor and in a minute or two, after finding out the purpose of his visit at such an early hour, at once livened up, saying:

"Remarkable....It is remarkable...."

The remarkable thing was precisely the fact that I. Ovchinnikov had come here from far away to solve the problem of creating a base here for an automotive detachment that would service the Kursk segment of the Urengoy-Uzhgorod gas pipeline, including the facilities due for startup this year--the first phases of the Kursk and Cheremisinovo compressor stations. Heretofore, large-load KRAZ's and MAZ's with trailers had had to drive the many tens of kilometers from Shebelinka to Kursk. And the pressure at the great construction project was rising each day. And while previously four or five vehicles had had to haul equipment to Kursk, now a dozen is not enough. And so Khar'kov transport workers had decided to place a motor pool close to the sites of the main developments on the supergaspipeline--to create small field facilities for 12-15 heavy-load trucks at Kursk and Cheremisinovo, with equipment and repair services, and with mobile housing and dispatcher communications.

"It's not enough to say that our deadlines are unprecedented, for they are, literally, fantastically short. The 'blue fuel' should be rushing to the western border over the Urengoy-Uzhgorod line in a year and a half!" N. Khorev, while rushing to the compressor station, glanced through the Volga's windshield at the black earth, which had been freed of snow. Obviously, he was pondering when the ground would dry out and it would be possible for the rotary excavator to go there to begin to dig the ditch for the pipe--almost 1½ meters in diameter--for the gigantic river of gas.

Its Kursk segment possibly is not so big--about 350 km. It stretches from the border of Lipetskaya Oblast to the border of Sumskaya Oblast, over Orel and Kursk land. Several high-capacity compressor stations will rise up here. While only pioneer detachments of the All-Union Erecting Association Soyuzspetstyazhstroy, which have started preparatory work on the first phase of the Cheremisinovo Compressor Station, have arrived at Dolgoye, Orlovskaya Oblast, at Kursk the first compressor station will go into operation in 2-2.5 months. Subunits of the All-Union Association Kursktyazhstroy are working here.

We arrived at the erecting site of this station at midday. All around was a mash of mud, but a road laid with reinforced-concrete slab leads here from the highway. The same types of access routes have been laid to the administration office, the mobile housing and domestic services, the casting yard for the prefabrication of consolidated modules for structure to be erected, and to the footings, where installation of the station's operating equipment has begun. In the erecting zone, arranged in a row at a slight distance from each other and sparkling with fresh paint, are the Ural's gas turbines, which have just been delivered from the Ryshkovo Railroad Yard by 100-ton trailers. Six turbines will be installed at the first compressor station, which will serve the Yelets-Kursk gas pipeline.

"Installation of the modules for purification and cooling of the gas has already been completed," explains chief of Construction and Installing Administration No 1 of Kurskpromstroy [Kursk Industrial Construction Trust] S. Brykalov. "The footings under the turbines are completely ready. What is more, not just for the turbines but also for all the station's equipment. Soon we shall put the gas turbines in place, and then we shall erect 'little houses'--shelters--for them."

Open-work steel structure--the basis for the turbine shelters--has been erected above the footings, where the powerful gas-pumping units will rise up. The same structure can be seen not far from this area. There, as S. Brykalov explained, the frameworks of the buildings for the dining hall, the power units, the operations center, and modules for the lubricating activity and various auxiliary services are being erected. All the facilities should be turned over in unison and strictly according to the critical-path schedule.

"We have been provided with practically all the mechanisms, the equipment arrived by the established deadlines, and the operations, both basic and auxiliary, are being conducted ahead of schedule," says S. Brykalov. "In June we shall turn the station over to the operators and right away we shall transfer to erection of the second compressor station, which is directly on the Urengoy route."

As is the case everywhere on the Urengoy-Uzhgorod arterial, at Kursk also an integrated technological flow-line group, which consists of specialized subunits that are doing the construction and installing work in the full amount on definite gas pipeline segments, is operating. USSR Mintyazhstroy [Ministry of Construction of Heavy Industry Enterprises] subunits are erecting the compressor stations, and Minneftegazstroy [Ministry of Construction of Petroleum and Gas Industry Enterprises] subunits are building the linear portion of the gas pipeline route, from the digging of ditches, the welding of pipe into pipelengths, the transporting and insulating of the pipe, the laying of the pipe into the ditch, and the backfilling of the ditch, to even the recultivation of the ground. In particular, on the Kursk segment, these operations are being performed by celebrated collectives of the Krasnodar, Stavropol' and Rostov truboprovodstroys [pipeline construction trusts].

This stretch of the Urengoy gas pipeline has proved, perhaps, to be in a more advantageous situation. For those same subunits that had just completed the laying of the 214-km gas strand from Yelets to Kursk were included in the construction here. It is at that comparatively small bridgehead that these forces were tested prior to the powerful spurt on the Urengoy gas pipeline. The precise interaction of all the detachments of gas pipeline builders was worked out, a materials and equipment base was created for them, and multilateral ties between out-of-the-way subunits and the lead subunits of the integrated technological flow-line group were set up.

Practically when the last kilometers of the Yelets-Kursk gas pipeline had just been laid, all the Glavyuzhtruboprovodstroy [Main Administration for Pipeline Construction in the Southern Economic Region] detachments that had worked on this section began t once to weld 1,420-mm pipe into pipelengths for the Urengoy gas pipeline and to transport them to the route. In a short time they were able to create a substantial backlog of accomplished work. We became convinced of this on the same day that we came to one of the most lively installers' sites of the Kursk gas pipeline segment, a site that was spread out on the edge of the old village of Okhchevka, close to the city of Shchigra.

A feeling of the majesty of the started enterprise will come over you with the first steps about the erecting site. There are enormous stacks of pipes made of blue steel which have been placed with precision, as if they had been poured there. There are the bright flashes of the electric welding. Powerful lifting cranes and road tractors....And smooth streets of mobile housing with television antennas on the flat roofs....At the edge of the housing settlement is the office of the third section of Construction and Installing Administration No 4 of Krasnodartruboprovodstroy [Krasnodar Pipeline Construction Trust], which is operating here. At the entrance to the office we also meet the chief of the section of Construction and Installing Administration No 4, V. Azanov.

"Fifteen kilometers of pipelengths have gone out to the route," says Veniamin Andrianovich, rubbing his hands with satisfaction. "And in all, 25 km have already been rotary welded, and the strand has been lengthened almost 10 km by overhead welding. The lads are working simply excellently. When they do not do 1½ times the norm they do not leave the work stands. Up to 1 kilometer of pipelength per day is welded...."

We are standing beside a welding stand of a preparation brigade. The brigade leader himself, fitter A. Chistoprudov and welder A. Belovitskiy were doing the joint of an ordinary pipelength. In bare minutes the two pipes had been centered, the so-called root joint had been run and dressed, and a hot pass and a sealing run had been made of it, and again, the place of the welding had been dressed to a shine. Only then was the pipelength sent to the semiautomatic welding machine. There it falls into the hands of the family element of a most experienced welder, holder of the Order of Lenin N. Mozgovoy, and his wife Nina, who performs the function of apprentice welder. For a quarter of a century they have been laying gas pipelines in various parts of our country. It was impossible to take one's eyes off their meticulous work. The final forming of the pipelength joint takes place on this stand by means of the semiautomatic Styk-1, and the strictest check of the joint's quality is made.

Defectoscope operator M. Aksenov, using X-ray equipment, photographs the joint on photographic film, studies attentively the whitish strip that lies on the dark background, marks down on a special stub the number of the joint, the seal of the welder, the diameter of the pipe, and the date of the welding, and he puts down his own evaluation and issues the "conclusion" to the welders' brigade. And the numbered film goes into the files, where it will be kept until operation of the gas pipeline ceases. So at any time, among even the thousands of kilometers of super-long gas pipeline, it will always be possible to look up both these pipes and this pipelength, and the makers of any joint by this film. Thus the gasline builders have a procedure, and each of them is dedicated to following it.

Together with the leader of the quality-monitoring brigade, N. Novginov, we went into the laboratory and asked M. Aksenov to show an X-ray picture of any defective joint. But in his voluminous archive there proved to be simply no such pictures.

"And there should not be any," welder N. Mozgovoy declared firmly. "Such an important route....It is impossible to allow even one slip here."

The integrated brigade of 10 men had spent exactly half an hour joining an ordinary pipelength. Tomorrow powerful road tractors will take it out onto the route, where this pipelength will be "fastened" to the strand, and it will be insulated and prepared for laying in the deep ditch.

When we again went to the office of the erecting section, its chief, V. Azanov, talked about his comrades who were building the gas pipeline, and about those with whom he had worked thousands of kilometers on the country's gas routes. With a certain special fervor in his voice he named the Babanskiy brothers--Aleksandr, Ivan and Viktor--who several years ago had come to his detachment as quite young and inexperienced welders, but who nowadays are transmitting the secrets of their trade even to foreign colleagues. It was evident to all that , in a paternal fashion, family dynasties and their devotion to the difficult migratory trade of pioneers of the blue arterials were dear to Veniamin Andrianovich. And he named from memory a father and son, the Petrakovs--Ivan Prokop'yevich and Aleksandr, and the welders' brigade leader Boris Rudikov and his wife, Nina, the supply person of the section....

V. Azanov also shared the near-term plans for improving the cultural and personal-amenities situation of the residents of the temporary settlement. A special construction brigade has been established for improving its amenities. When warm weather comes, it will start to lay sidewalks and space out lawns. A new dining room, club, guest house, and small kindergarten will be equipped. And, of course, the establishment of a repair base, a filling station, and parking for large-load vehicles will be completed for the full development of operations directly on the arterial....

Then Veniamin Andrianovich went up to the large map, took off his cap, and said pensively:

"What a thing we have here: where is it that fate hasn't taken us....We have done the Central Asia-Central Economic Region, Bukhara-Ural, Ukha-Torzhok, Orenburg-Novopskov and Soyuz gas pipelines. So many famous names! But here now the old Kursk village of Okhochevka, which is not well known and is not marked on all the maps, has entered our hearts....The work--what a good song it is!"

11409
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BRIEFS

PIPE MANUFACTURING EFFICIENCY--Chelyabinsk--The collective of Department No 6 of the Chelyabinsk Order of Lenin Piperolling Plant has won a new labor victory in the competition in honor of the 60th anniversary of the forming of the USSR. Since the start of the year it has manufactured 5,000 tons of pipe above the plan, and in so doing has saved 220 tons of rolled plate. The Uralites' highly effective work is the result of the systematic introduction of scientific and technical achievements into production work. Each year tens of valuable technical and organizational solutions are put into use here. For example, the installation of an additional arc on the mills for the external welding of pipe 1,220 mm in diameter has enabled the amount of waste to be reduced appreciably, and, thereby, the output of acceptable product to be increased. This one innovation alone will enable the department's collective to save more than 400 tons of metal these days. Leading in the anniversary competition are the brigades of welders' foremen T. Tukhvatullin and M. Konstantinov. Together they have given more than 1,600 tons of pipe of excellent quality above the plan. [By V. Zenkovskiy] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 16 Apr 82 p 1] 11409

GAS PIPELINE IN KARAKUMY--Erectors of Shatlykgazstroy [Shatlyk Trust for the Construction of Gas Industry Enterprises] welded the last joint on still another gas pipeline in the Karakumy. The natural gas that will be sent over the new 110-km arterial from the Mollaker field will feed the Mariyskaya GRES and will also serve as basic stock for obtaining "fertility vitamins" at the Turkmen Nitrogen Fertilizer Plant. [By V. Gavrichkin] [Text] [Moscow IZVESTIYA in Russian 13 Apr 82 p 1] 11409

GOR'KIY PIPELINE WELDING--The first 100 large-diameter pipes have been welded on the Gor'kiy segment of the Urengoy-Uzhgorod gas pipeline. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 15, Apr 82 p 3] 11409

WORLD'S GREATEST PIPELINE CAPACITY--The share of pipeline transport, including gas pipelines, is 30.8 percent of the freight turnover for all types of transport. It has no equal in the world in capacity. The USSR has 132,000 km of arterial gas pipelines and 57,500 km of oil pipelines. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 16, Apr 82 p 13] 11409

PIPELINE CONSTRUCTION IN LITHUANIA--Kaliningrad--The first kilometers of the gas pipeline over which "blue fuel" of the Urengoy field will be making a path from Vilnius to the Baltic's shores during the current five-year plan has been laid close to Kaliningrad. On Lithuania's land, the strand of welded pipe has approached Kaunas. The collectives of Trust No 2 of Soyuzgazpromstroy [All-Union Association for the Construction of Gas-Industry Enterprises] and Administration No 3 of Lengazspetsstroy [Leningrad Trust for Special Construction of Gas Industry Facilities] will work in opposite directions. [By K. Kasyukov] [Text] [Moscow IZVESTIYA in Russian 7 Apr 82 p 1] 11409

PERM'-AL'MET'YEVSK OIL PIPELINE--The erection of the final section of the Perm'-Al'met'yevsk oil pipeline was completed a month ahead of the scheduled deadline. A collective of Tatneftprovodstroy [Tatarskaya ASSR for Oil Pipeline Construction] laid the 150-km segment of the arterial in less than a year. More than 10 water obstacles were surmounted. [Text] [Moscow KRASNAYA ZVEZDA in Russian 25 Apr 82 p 1] 11409

POWDERED PAINT FOR PIPELINES--Yaroslavl'--The first 250 tons of a new powder coating has been produced at the Lakokraska Association in Yaroslavl'. It is intended for painting underground gas pipelines. Already this year the enterprise has produced hundreds of tons of powdered paints. They have improved physical and mechanical properties and greater strength. [By V. Kurapin] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 31 May p 2] 11409

ALMAZNAYA TURBOCOMPRESSORS INSTALLED--The erection of the turbocompressors of the Almaznaya station, which is situated on the Urengoy-Petrovsk trunk gas pipeline route, has been completed ahead of time. Three gas pipelines from Urengoy with a total length of more than 700 km will pass through Permskaya Oblast. [Text] [Moscow KRASNAYA ZVEZDA in Russian 4 Apr 82 p 1] 11409

UKRAINIAN PIPELINE BUILDERS' AMENITIES--Zakarpatskaya Oblast--The laying of the largest trunk gas pipelines from Urengoy is going on full blast on routes thousands of kilometers long in Russia, the Ukraine and Belorussia. Engineering preparation in the Uzhgorod direction also has been promoted. More than 260 km of gas pipeline must be built in Ivano-Frankovskaya and Zakarpatskaya Oblasts in 2 years. The Mukachevskiy Workers' Supply Section of Ukrgazstroy [Ukrainian Gas Pipeline Construction Association] and its branch in the city of Dolina, Ivano-Frankovskaya Oblast, have been charged with servicing the construction workers. "We already have," says ors [Workers' Supply Section] chief S. I. Mokan', "experience in servicing the builders of the Soyuz gas pipeline. Right now we are still operating railcar dining rooms and motorized traveling stores, but the erection of stationary trade facilities has started at the builders' future production bases. Dining rooms that seat 500 each and stores for selling commodities for everyday use will be built in 4 villages. Food will be sent in thermos containers from base dining rooms to the most remote sections--places where the pipe is being welded, at the forest cuttings and high in the mountains.... [By I. Myshalov] [Text] [Moscow SOVETSKAYA TORGOVLYA in Russian 13 Apr 82 p 1] 11409

'POCKETS' FOR WEIGHTING PURPOSES--Novyy Urengoy--Urengoy builders have used an original method for fastening gas pipelines to ditch bottoms in swampy localities. Until now pipes in water-filled ditches were supplied with reinforced-concrete weights. For this purpose, a thousand or more tons of reinforced concrete had to be placed per each kilometer of line. And it was not at all easy to haul such large amounts of freight in the Tyumen' North environment. Now singular "pockets" made out of panels of nontextile material, into which soil taken from digging the ditch is inserted, are used. As tests indicate, this material possesses high resistance to breakdown and high chemical resistance. [TASS] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 13 Apr 82 p 2] 11409

PETROLEUM TEKHNIKUM MODERNIZATION--Volgograd--The laboratories of the Volgograd Gas and Oil Tekhnikum are being supplied with new equipment ahead of schedule, although some of the existing equipment had been installed about 3 or 4 years ago. This indicates rapid progress in our country's gas industry. The tekhnikum graduates middle-level specialists both for the Soyuz gas pipeline, the Urengoy-Uzhgorod-Western Europe and other gas pipelines which are now being equipped with the newest control systems. The Kvarts-2M, Elektro-2, Vega-2, Zashchita-3, Signal-2M and 3M, Impul's-2, Tsikl-1 and other systems are now being installed in the tekhnikum's laboratories. These systems automatically regulate the speed and volume of delivery of the product and its consumption on operating gas and oil pipelines and it switches on emergency systems when the requirement therefor arises. On finishing the tekhnikum, the graduates voluntarily go to the most remote places, where automated control systems are being installed or operated on gas arterials. [By A. Chemonin] [Text] [Moscow IZVESTIYA in Russian 28 Apr 82 p 2] 11409

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JPRS 81465

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USSR Report

ENERGY

No. 109

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JPRS 81465

5 August 1982

USSR REPORT

ENERGY

No. 109

CONTENTS

ELECTRIC POWER

New Rail-Transported Diesel Generators Described
(A. Muchkin; GUDOK, 9 Jun 82) 1

Role of Neryungri Power Plant Described
(M. Morozov; PRAVDA, LO Jun 82) 2

Update on Balakovskaya AES Construction
(A. Vorotnikov; PRAVDA, 9 Apr 82) 3

Hydrogen Fuel Development
(A. Shashkov; SOVETSKAYA BELORUSSIYA, 9 Apr 82) 5

Power Shortages at Farms
(D. Prosekov; SEL'SKAYA ZHIZN', 21 Apr 82) 8

Briefs
New Turbine Generator 12
New GES in Tbilisi 12
Renovation of the DNEPR GES 13
An Economical Turbine 13
High Speed Turbine Testing Completed 13
Gas Complex 13
Zuyevskaya GRES Operation 13
Donbassenergo Association Power Production 13
Power Plant Construction 14
Hydropower Construction 14
Shatura Plant Modernization 14
Power Interruptions 14
Tajik Power Construction 15
Transmission Line Construction 15
Ekibastuz Power Line 15

Estonian Pollution Prevention 16
Power Plant Delays 16
Ekibastuz Plant Problems 16
Mingechaur Power Construction 16

FUELS

Simple Method Devised for Putting Out Oil, Gas Well Fires
(M. Chetverikov; SOTSIALISTICHESKAYA INDUSTRIYA, 24 May 82) 17

Difficult Drilling Conditions Hold Up Search for Mesozoic Oil in Azerbaijan
(S. Astvatsaturov; VYSHKA, 21 May 82) 21

Methods for Developing Vast Gas-Hydrate Reserves of North Discussed
(N. Cherskiy and V. Tsarev; IZVESTIYA, 21 May 82) 23

Gas-Condensate Fuels Not Used Fully in Fuel-Importing Yakutia
(V. Basonov and A. Lavrik; EKONOMICHESKAYA GAZETA, Apr 82) 25

Early Work at Yamburg Gas-Condensate Field Includes Dock Construction
G. Zatsenko Interview; KRASNAYA ZVEZDA, 23 May 82) 27

Briefs

High Komi Oil Recovery 29
Transportation for Urengoy Geologists 29
Uzbek Pneumatic-Drive Pump 29
East Turkmen Gas Region 29
Azerbaijan Oil Well Restored 30
Buzachi Derrick-Building Speeded 30

PIPELINES

Council of Ministers Publishes Pipeline Protection Rules
(SOBRANIYE POSTANOVLENIY PRAVITEL'STVA SOYUZA SOVETSKIKH SOTSIALISTICHESKIKH RESPUBLIK, No 4, 1982) 31

NEW RAIL-TRANSPORTED DIESEL GENERATORS DESCRIBED

Moscow GUDOK in Russian 9 Jun 82 p 2

[Article by Engineer A. Muchkin: "A Mobile Energy Source"]

[Text] Where there is neither proximity to power systems or stationary sources of current it is possible to find the PE-6 mobile diesel power plants produced by the Bryansk Machine Building Plant Production Association.

"The four-axle railway car specially designed for this purpose," said the chief production engineer at the railway car building plant E. Kochanov, "has been equipped with a diesel generator unit with a capacity of 1,050 kilowatts. It generates electric power with three-phase alternating current with a voltage of 6,300 volts and a frequency of 50 hertz. The unit meets modern requirements made for the best models of similar electrical equipment while the compactness and simplicity of servicing the diesel ensure its operating responsibility."

The power plant can be transported as part of any trains at a speed of up to 100 kilometers per hour. It can be delivered by water to those areas not reached by railroad tracks or at the nearest railroad station removed from the carriage, placed on wooden or metal skids and pulled by a tractor to the destination. It has been "dropped in" by helicopter to sections of the Baykal-Amur Mainline under construction.

Several of the mobile diesel power plants can be connected into a single powerful power unit capable of providing normal activities and operation of an entire town. A group of 15 such plants have been used in building Tynda.

At present, the Bryansk Plant has developed an experimental model of a more powerful mobile diesel power plant called the PE-8.

10272
CSO: 1822/212

ROLE OF NERYUNGRI POWER PLANT DESCRIBED

Moscow PRAVDA in Russian 10 Jun 82 p 1

[Article by M. Morozov, correspondent of the newspaper SOTSIALISTICHESKAY YAKUTIYA from Neryungri in the Yakut ASSR: "GRES Is Growing"]

> [Text] Construction has started on a 240-meter reinforced concrete smokestack at the Neryungri GRES which will become the power heart of the gigantic Southern Yakut Territorial Production Complex. This responsible job has been entrusted to the collective headed by I. Kosenok from a section of the Spetszhelzobetonstroy [Special Reinforced Concrete Construction] Trust.

The plans for this unusual structure in a zone of high seismicity will have double reinforcing from high-strength steel and a diameter at the base of 35 meters. The first level 2.5 meters high was poured in 24 hours by the brigade of A. Kol'tsov.

The prompt completion of the station also involves the creation of a reservoir with a capacity of 58 million cubic meters. On the small Olongro tayga stream, the laying of the loams in the body of the dam has been accelerated so as to be able to "catch" the spring flood waters. The experience of the construction workers on the first permafrost Vilyuy GES was essential. Here there are many Vilyuy veterans headed by Hero of Socialist Labor A. Novolodskiy.

"At present at the site there are no secondary projects," stated the director of the GRES under construction, D. Bukin. "Three months before beginning operations, and the first power unit should be in operation next year, a chemical water treatment facility should begin operating."

The power of the plant is 630,000 kilowatts. It will also be a heat-generating plant providing heat for the center of the Southern Yakut Territorial-Production Complex, the town of Neryungri. The power generated by the plant will go into the Far Eastern power ring and the coal complex will become the basic consumer of the electric power. Here coal mining is to be carried out by the strip mining method. This is power-intensive production.

At the construction site of the GRES, an intense work pace is maintained around-the-clock. The dates are approaching for completing the projects of the first territorial-production complex in the zone of the Baykal-Amur Mainline. The power construction workers must create a staging area for tapping not only the coal but also the iron ore deposits of Tayezhnyy and Desovskiy which are located nearby. The first thousands of tons of ore have already been dispatched for comprehensive production testing to the metallurgical plants in the Urals and Kuznetsk Basin.

10272
CSO: 1822/212

UPDATE ON BALAKOVSKAYA AES CONSTRUCTION

Moscow PRAVDA in Russian 9 Apr 82 p 1

[Balakovskaya AES Construction Report by A. Vorotnikov, PRAVDA correspondent in the Saratovskaya Oblast': "AES on the Volga - According to the Construction Chart"]

> [Text] An important stage in operations has been completed in the construction of the Balakovskaya AES. Pouring the concrete of the foundation for the first power unit's turbine has just been completed in a record short time. It is also important to note that the record was established in winter and a large part of the concrete had to be layed in the hard frost. The "authors" of this surprising achievement are the teams headed by A. Filatov, V. Tatkov and others.

But how are things in the construction of the plant as a whole? Before answering this question, the head of the Saratovgesstroy Administration, A. Maksakov, pointed out a large piece of paper attached to the wall. There were three colored lines on it. A green one for the plan assignment, a red one for its actual fulfillment and a blue one for the start-up graph. "As you see, we are fulfilling the plan, but unfortunately, we are lagging behind the start-up graph."

We left for the construction site with Maksakov. Passing Balakovo, the vehicle passed onto a wide highway. Finally, we saw the construction site, stretched out on a surface area of 375 hectares. The spot was well chosen: near a transport artery such as the Volga. Yes, and there was as much water as one needed and when the plant is finished, a lot of water will be required for technological purposes. Arrayed alongside were the enterprises of the construction organizations, the administrations of Saratovgesstroy.

The reactor section is the heart of the plant. Its assembly is now underway. There was a lot of work going on here. Already the laying of the base for the first atomic reactor showed that the collective of builders is capable of creatively resolving the most complex of problems. For instance, the design provided for the driving of 20,000 pilings many meters in length. This operation is not only labor intensive, but requires a lot of time. Local innovators proposed the building of a dense gravel "cushion" in place of the pilings. It is true, the question came up of whether or not such a "cushion" could serve as a reliable base for the future critical structure. Specialists were called in. They painstakingly tested each layer of the base and came to the conclusion: even a reserve of strength had been created. The innovation helped to save 500 tons of reinforcement steel and 3,000 tons of cement. And this was for only one unit, while the AES will have four of them.

An integral process contract is introduced at the building site with considerable success. It will eventually link the entire technological chain: from the combination of industrial enterprises and transport to the building site. A task is formulated: all of the participants in this unique conveyor must be responsible for the final result.

The building of the AES is constantly maintained under the control of the Balakovo city party committee. Party groups and peoples' control posts have been created at the basic structures. Brigades and sectors are competing to reduce the work time involved.

According to the start-up graph, the first unit of the AES must begin operations at the end of 1984. The Balakovo builders will have to accomplish a large volume of work in this time.

Unfortunately, not everything is going smoothly on the main structure. For instance, the builders have serious complaints about the quality of the product of the Number 2 precast reinforced concrete plant. Cracks and chips are encountered in individual slabs of the wall units. As a result, there are difficulties in completing operations related to the chemical protection of the units. The reinforced concrete construction works Number 3 is often behind schedule in filling rush orders. The Balakovo assembly administration of the Volgoenergomontazh Union has a weakly developed base. Because of this, erecting the plant buildings and floor slabs is often delayed. It is important to quickly overcome the delays which are occurring in individual sectors and to help the builders of the AES to better organize their labor.

9767
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HYDROGEN FUEL DEVELOPMENT

Minsk SOVETSKAYA BELORUSSIYA in Russian 9 Apr 82 p 2

[Article by A. Shashkov, chairman of the Committee for Hydrogen Power Engineering and Technology of the presidium of the Belorussian Republic Council for Scientific and Technical Societies and member of the Belorussian SSR Academy of Sciences: "Expensive, but Beneficial"]

[Text] Further development of the national economy will lead to an increase in energy requirements. The BSSR imports more than 70 percent of its energy resources. Therefore, the implementation of a broad program of fuel and electricity conservation is becoming critical. However, today it is no longer possible to substantially conserve these resources by traditional methods, and the problem demands a fundamentally new approach. One approach is to create industries which have wasteless technology, where gaseous hydrogen is used as the main energy carrier. As an energy carrier, hydrogen has universal properties and its consumer value is somewhat higher than electrical current which, with justification, is considered an ideal type of energy.

The problem includes the production of cheap hydrogen and methods for its storage and use in various branches of the national economy. The Institute of Nuclear Power Engineering of the BSSR Academy of Sciences is working on the production of relatively cheap hydrogen on the basis of a new technology along with the Problem Laboratory of Thermochemical and Combined Methods for the Production of Hydrogen from Water of the Belorussian Technological Institute imeni S. M. Kirov. These studies are extremely important in the scientific and practical plane, although ideas are encountered which say that if there is no cheap hydrogen, then there is no reason to speak ab out its wide use.

At the same time, M. Ye. Yeroshov, a holder of the USSR State Prize, indicated in his articles that with the creation of integrated production, the use of even expensive hydrogen, produced by the direct electrolysis of hydrogen, may be economically useful. Then he justified this point of view along with V. I. Trutayev. Both of them are members of the presidium of the Committee for Hydrogen Power Engineering and Technology of the presidium of the Belorussian Republic Council of Scientific and Technical Societies. The problem of the use of hydrogen in the national economy was discussed and analyzed at a meeting of this committee.

Today there are already specific developments in the application and use of hydrogen. Thus, specialists from the State Institute for the Design of Biological Synthesis have drawn a technical and economic justification on the theme of "Biokhimkombinat". In it it is proven that the protein biomass obtained on the basis of hydrogen in integrated production which combines chemical and microbiological processes will become 2-3 times less expensive.

Moreover, profits may be gained in the machine building industry and in a number of other branches of the national economy through the replacement of acetylene welding by welding using hydrogen or oxygen produced through electrolysis of water. The latter method produces a gain of 20-30 kopeks per cubic meter of the replaced acetylene. Hydrogen is also finding wide use in the soldering of metals and is widely used in machine building. This is especially true in light of the fact that our institute has requested the Belorussian State Institute for the Design of Enterprises for the Hydrolysis Industry and Microbiological Synthesis to conduct a design development of a prototype hydrogenator for welding, and this request has found the support of P. G. Khramotsov and a number of specialists from this institute. Outside of the plan of operations, they created blueprints for a generator. Now it is in the construction stage. It is thought that in the future, should positive results be received, it will be necessary to solve the question about the industrial introduction of the innovation on a republic-wide scale. It should be noted that the Scientific Production Association for Powder Metallurgy is also participating in the creation of hydrogen generator prototypes.

Of interest are works of the Elektroset'proyekt Institute, which has begun a technical and economic evaluation of replacing solar oil with hydrogen as a fuel for drying grass meal. Presently hydrogen is 3-4 times more expensive than the corresponding volume (of liberated heat) of solar oil. However, if the oxygen (obtained from water simultaneously with hydrogen) is not discarded during the drying of the grass meal, but is used, for instance, for welding and cutting metals, for damming operations and the like, then such a replacement of solar oil will become economically expedient. Moreover, with the new drying method, high process purity is guaranteed and the requirement for the solar fuel packaging industry and the transport expenditures are eliminated.

An original method for purifying artesian wells is being proposed in the hydraulics office of the Belorussian Polytechnical Institute. The first purification tests using explosion of hydrogen that is produced directly in the well through water electrolysis are being conducted. This method is simpler, safer and more energy efficient than the hydroelectric impact method which is widely used for these purposes.

These are only a few of the examples of the use of hydrogen obtained by the traditional method, electrolysis of water. A number of chemical industries have a great volume of exhaust gases which contain hydrogen. Using this waste hydrogen to produce protein (such an installation is being built in Grodno at the Azot Production Association) or to directly produce electric power in fuel elements produces a direct savings in energy resources.

Using the heat of enterprises' exhaust gases--and special thermoelectric reaction cycles--to produce hydrogen is another possibility. It involves transforming thermal energy into hydrogen energy needed by these same factories.

It should be noted that the Belorussian State Institute for the Design of Enterprises for the Hydrolysis Industry and Microbiological Synthesis, which requires hydrogen as a raw material for producing protein biomass, is now designing the country's first prototype installation for producing hydrogen from water using thermoelectric reaction cycles with exhaust gas heat. This method was proposed and developed in the BSSR.

The cited examples attest to the fact that the broad use of even currently expensive hydrogen produces significant savings and conserves energy reserves. Moreover, the universal qualities of hydrogen justify the belief that a genuine way to significantly save energy reserves has been found.

Today, numerous works for the practical use of hydrogen are being conducted in the republic mainly by enthusiasts on a public basis. Unfortunately, the institutes of the Belorussian Academy of Sciences have for now only organized studies which are related to the development of methods for producing and storing hydrogen without examining questions on expanding its use in the national economy. It is apparent that the time has come to create a republic-wide program to resolve problems of conserving energy resources by using hydrogen.

9767
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ELECTRIC POWER

POWER SHORTAGES AT FARMS

Moscow SEL'SKAYA ZHIZN' in Russian 21 Apr 82 p 2

[Article by D. Prosekov, Kalinin-Pskov Oblast correspondent: "It Has Been Turned Off Again--Just When Will Reliable Electricity Supply to Rural Consumers be Put in Order?"]

[Text] "In October and November the power was shut off three days a week and there was no electricity at all for 22 days in December. The situation has not improved this year." These words appeared in a SEL'SKAYA ZHIZN correspondent's article from the "Zavet Il'icha" collective farm of the Staritskiy Rayon of the Kalininskaya Oblast by its chairman, A. Logoveyev and the party organization secretary N. Ignatova. "Because of this, the community-owned herd is irregularly supplied with water; the pipes in three pumping stations were burst by frost and the automatic watering system in one of the cow sheds broke down. The feed works and the scraper transporters do not operate. As a result, the collective farm lost a lot of milk and meat. The animal breeders are leaving the farms and some totally leave the village; they are tired of sitting under a kerosene lamp. You can't even watch television or listen to the radio. And goodness knows when we will have reliable power supply."

This is one of the alarm signals from the Staritskiy Rayon. And it is not the first or the only one. SEL'SKAYA ZHIZN' has already written three times about the numerous interruptions in the electricity supply in these regions of the Kalininskaya and the neighboring Novgorodskaya and Pskovskaya Oblasts. But to date there have been no sudden changes for the better. As before, in many villages there are frequent, unplanned and emergency shut-offs of electric energy sources. According to the data from the Staritskiy Rayon power grid (honestly speaking, underestimated data), in the first half of January alone, 27 kdkhozes and sovkhozes were without electric power for a total of 3,150 hours.

It might seem that winter is the root of the problem. But the situation is no better in the summer. The first secretary of the Rzhevskiy Raykom, I. A. Gurov, spoke of this at a session of the oblast council last summer:

"In July the milk complex of the 'Afanosovskiy' sovkhoz was without electricity for five days. The 'Pyatnitskiy' sovkhoz had interrupted power for more than three summer months. At the 'Mirnyy' and 'Glebovskiy' sovkhozes and other farms, 2,500 cows had no water one day in May. It is not the weather which is at fault. The lines break down because of dilapidation. Measures are taken, but we in the villages cannot do everything ourselves."

It is disturbing that the number of unplanned cut offs from electric power sources and the loss borne by this are essentially not being reduced. The feeling is created that the Ministry of Power regards rural electrification as a stepchild and no one is really doing anything about it.

Consider these figures: according to far from complete data, there were more than 1,500 unplanned shutdowns last year in the Kalininskaya Oblast. There were even more in the Pskovskaya Oblast. As G. S. Krivov, the head of the production administration of the Pskovskiy Rayispolkom, reports, there were at least 3,000 recorded in 1981. In the Gdovskiy Rayon alone there were 115 unplanned shutdowns in December. The head engineer of the Novgorodskaya Oblast Agricultural Administration, V. A. Fomin, says that in the past year unplanned electricity shutoffs occurred at 3,652 industrial structures, including 2,130 animal husbandry ones, and kolkhozes.

It is true that statement of the USSR Deputy Minister of Power and Electrification Ye. Borisov in his 1980 letter to the SEL'SKAYA ZHIZN' editor that "there were no emergencies in the electric grids related to extended interruptions or major incomplete deliveries of electric power in the Kalininskaya and Pskovskaya Oblasts in 1979 and in the first half of 1980" is incomprehensible. Are the above cited examples included in this category or not? When electric power is not supplied to a village for 15-20 hours or even several days and the production equipment is disrupted, then no matter what terminology or category we think up, it will be no better and the material losses will not be reduced. If a cow is not milked on time, its productivity is reduced. And when several milkings are skipped in a row, the animal may dry out or one will no longer get a lot of milk out of her.

Unfortunately, no one considers the losses. No records are kept of the unplanned or emergency shutoffs in a majority of the farms, in spite of the fact that several years ago the head of the production administration for agriculture of the Kalininskiy Oblispolkom issued a special order.

"Why keep records?" they say in the collective and state farms. "You're only wasting paper. No one will take the responsibility for the shutoff anyway and the loss will not be repaid."

But it would be worth it to strictly punish the guilty. The question about responsibility for the supply of electric power has been raised often in the press and it is time for the power bosses to correct the situation. Today the majority of kolkhozes and sovkhozes are supplied with energy as the so-called third energy category. This means that they may be shut off at any time for an undetermined length. But no one bears the responsibility for this. Is this right?

The emergency unplanned shutoffs are caused primarily by the low reliability of the grids. Rural electrification in its day was intensively conducted; lines were layed through swamps and forests; untreated logs served as supports and substandard wires were suspended with too small sections. Neither was there the proper care of the grids. But the demand for energy grows year by year, and the loads on the lines increase.

And here is the result: in the Pskovskaya Oblast, for example, many distribution grids for agriculture, especially the low voltage ones, are in an extremely poor technical state. Every fifth kilometer of the rural electricity grid with a voltage of 0.4 kilovolts is in emergency condition, and more than 18 percent of the grids require major repair. It is especially unfavorable in the Velikolukskiy, Porkhovskiy and Dedovichskiy Rayons.

In the Kalininenergo administration they say: "The supports for the majority of the lines were placed 20-25 years ago, and they should be replaced on a mass scale. But where are the materials?" And they cite figures such as the following: In 1981 "Kalininenergo" received only half of the designated wooden powerline supports and even fewer treated ones. Two-thirds of the reinforced concrete supports were delivered, and 40 percent of the 10/0.4 kv power transformers.

The Ministry of Power Engineering and the Ministry of Agriculture of the USSR issued joint orders in which they identified specific measures in each field. The only problem is that many of them remain on paper.

The best method for reducing and eliminating emergency shutoffs is preventive maintenance.

"But we are unable, as they say, to patch the holes. Where do you start with the preventive maintenance?" acknowledges the head of the Selizharovskiy Rayon distribution grids, G. Shalayev, "there are no people."

In fact, as a rule, the electric grid organizations are not fully fleshed out with qualified workers. The number of personnel in the units of Kalininenergo is only 74 percent of the standard and in the Rzhevskiy, Staritskiy, Kesovagorskiy and the Molokovskiy Rayons, only 30-45 percent. Of the 40 electricians in the Selizharovskiy Rayon, only 8 are working. The state of affairs with specialists in kolkhozes and sovkhozes is even worse. Less than one-third are staffed with electricians. To date, cadre training for rural power engineering has not been set up in the senior and middle special training institutes or in the trade schools.

Approximately three years ago the USSR Communist Party Central Committee and the USSR Council of Ministers identified measures for the further development of agricultural electrification. In the adopted resolution it was planned, in particular, to increase the responsibility for unplanned and emergency shutoffs of the rural consumers. But this order is being unsatisfactorily fulfilled. Fewer material and technical resources are apportioned than planned, and the construction and reconstruction of electric power lines is going slowly. It is surprising that with such an alarming situation the Kalininselelektrosetstroy trust (subordinate to the Ministry of Power) plans lower volumes for this five-year plan than the collective has previously fulfilled. And it, even in the past, did not operate at full strength.

"We know that the need for construction and reconstruction is great, but the plan is the plan," says the director of the union, A. I. Marveyev, throwing up his hands.

Also alarming is the fact that the deliveries of the needed machines and mechanisms are being interrupted. For instance, it was planned to deliver 50 back-up diesel power plants to the Kalininskaya Oblast in 1981. Not a single one was sent. All-terrain tractors and means for low level mechanization are not delivered in sufficient quantity.

In the majority of kolkhozes and sovkhozes, the power engineering service is unskillfully managed. Kalininskaya Oblast has no electrotechnical personnel in 54 farms or responsible figures for the operation of the power management in 382 farms. As a result, there is no one to whom to report the slightest defect. Today in the oblast farms, there are more than 115,000 electric motors: there is an average of 120 of them on the kolkhozes and 210 on sovkhozes. Selkhozenergo is for now operating timidly. With a shortage of technology, materials and equipment and trained personnel, it would be better not to disperse them in small services. At present, 4-5 organizations of various agencies concern themselves with rural electrical service.

In a word, there are many problems with rural power engineering. But they are being resolved slowly and not in an integrated manner. The state is suffering enormous losses. The moral losses are no less: the moods of thousands of people and their everyday comfort are ruined. It is no secret that people often abandon the village because of this.

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ELECTRIC POWER

BRIEFS

NEW TURBINE GENERATOR--The Leningrad Industrial Electric Machine Building Union "Electrosila" imeni S. M. Kirov has recently built a unique turbine generator with a power of 80,000 kilowatts for the Ryazanskaya GRES; it is of high quality and was produced in a record short time--only three months. Similar units were serially produced here long ago, but the new machine is not gas cooled but completely water cooled. No other country has yet built such a machine. The complete water cooling of the unit makes it possible to significantly reduce its specific metal volume, to increase the efficiency, reliability and operational simplicity. All of this makes it possible to more effectively follow the path noted by the 26th CPSU Central Committee Congress: to develop a fuel power complex for the country, saturating it with economical units of increased unit power. "The 'Eight hundred', with full water cooling, is a major step towards machines having a power of 1 to 1.2 million kilowatts and greater, which will operate according to the same principle", says the deputy secretary of the party committee of the association Aleksandr Nikolayevich Yegorov. "The new equipment produced by the electric power workers is always being improved. Just two years ago the builders of the turbine generators assigned themselves the goal of producing 85 percent of the machines with the state sign of quality; this year they pledged to construct 100 percent of the turbine generators with the respected pentagon. The electric machine builders send their product to all the fraternal republics of our country from the banks of the Neva river. This year the turbine generators with the Leningrad brand will be sent to the Kursk, the Kalinin, the Zaporozh'e and the Ignalin AES, to the Cheboksary GES, the Pribaltiysk and the Azerbaydzhan GRES and others. The RSFSR, the Ukraine and Belorussia are major consumers of the electric motors produced by the union. Kazakhstan receives a large number of the electric machines. One of the largest works will enter operation this year at the Karaganda Metallurgic Combine. The electric power builders recently delivered approximately 100 large machines to its rolling mills. [Text] [Moscow KRASNAYA ZVEZDA 14 Mar 82 p 1] 1822

NEW GES IN TBILISI--A new important step in constructing the Khudonskaya GES, which will be second in power after the famous Ingura GES, began with the opening of a bridge over the Ingura river. Equipment and construction materials will be delivered to the structures being built over the bridge. Among the power plants presently being built in the republic is the Zhinval'skaya GES which, besides the fulfillment of its basic functions, will facilitate the fundamental resolution of the problem of supplying the capital of the republic with potable water, as well as that of the irrigation of more than 20,000 hectares of dry land for three rayons: Dushetskiy, Mtskhetskiy and Gardabanskiy. [Text] [Moscow PRAVDA 25 Apr 82 p 5] 1822

RENOVATION OF THE DNEPR GES--It has been decided to begin reconstructing the DNEPR GES imeni V. I. Lenin. After its completion, the power of the first-born of Soviet power engineering will almost double. Including the No 2 Dnepr GES, the total power of the giant will exceed 2 million kw. [Text] [Moscow PRAVDA 9 Apr 82 p 1] 1822

AN ECONOMICAL TURBINE--A new series of steam turbines with a power of 800 MW are noted for increased economy. The construction of the lead prototype of the machine was completed at the Leningrad Metal Works Association. The first machine is designed for the Permskaya GRES. [Text] [Moscow PRAVDA 9 Apr 82 p 1] 1822

HIGH SPEED TURBINE TESTING COMPLETED--The complex testing of a high speed atomic turbine with a power of 750,000 kw has been completed at the factory imeni Kirov in Khar'kov. Power units with a 1.5 million kw reactor at the Ingalin AES in Lithuania will be equipped with such units in the first stage. The enormous shaft of the new turbine rotates twice as fast as in atomic machines of such a class. To guarantee the reliable operation of the subassemblies, the achievements of metallurgists and highly precise processing of the parts are used. [Text] [SEL'SKAYA ZHIZN' 2 Apr 82 p 1] 1822

GAS COMPLEX--The second stage of the Shurtanskiy Gas Complex in the Kashkadar'inskaya Oblast has begun operation. The new power makes it possible to double fuel extraction and processing. Construction of the complex is continuing. [Text] [EKONOMICHESKAYA GAZETA No 9 Feb 82 p 6] 1822

ZUYEVSKAYA GRES OPERATION--The first current was produced by the new No 2 Zuyevskaya GRES in Donetskiy Oblast. Its design power is 2.4 million kW, eight times greater than the old Zuyevskaya GRES, built 50 years ago, which has served its day. [Text] [EKONOMICHESKAYA GAZETA no 9 Feb 82 p 6] 1822

DONBASSENERGO ASSOCIATION POWER PRODUCTION--Outstripping the timetable, the Donbassenergo Union has completed production of the 10 billion kWh of electric power since the start of the year, having expended almost 30,000 tons of conventional fuel less than last year. Such is the effect of the competition under the motto of "To save a half gram in the production of each kilowatt hour." The movement of conservationists was born at the Uglegorskaya GRES on the day of the opening of the 26th CPSU Party Congress from the rostrom of which it was named as one of the new structures which increased the power of domestic power engineering. After the party congress, the plants of the Donbassenergo Association noticeably increased the delivery of electricity to the Donets Basin, having taken one quarter million tons less coal from the basin than in the previous year. The achieved savings are equal to two months of coal extraction of a large mine. [Text] [EKONOMICHESKAYA GAZETA no 9 Feb 82 p 6] 1822

POWER PLANT CONSTRUCTION--The fourth power unit at the Ekibastuz GRES-1 has been accepted for operation. With its operation, construction has been completed on the first stage of the plant, the designed capacity of which has reached 2 million kilowatts. Here they have already completed the assembly of the fifth power unit with a capacity of 500,000 kilowatts. The electric equipment has been turned over to the final mechanics. Planned electric power output was reached 4 months ahead of time at the Navoi GRES. By the end of the year the plant collective intends to produce around 30 million kilowatt hours of electric power for consumers above the plan. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian 24 Jun 82 p 3] 10272

HYDROPOWER CONSTRUCTION--The constructions workers of the Sayano-Shushenskaya GES have begun to pass the fifth flood of the season. The conquerors of the Yenisey have considered all possible emergency situations. Certainly one must always be on guard with the Yenisey. The lessons of the 1979 flood remind one of this when the waters arriving in the reservoir had to be passed over an incomplete dam. In May the inflow into the river was more than 3,000 m^3 of water per second and at the beginning of June it again tripled. The plants are not merely to release the water but also make maximum use of it and force it to turn the six Sayan turbines. For this the hydropower construction workers had not only to increase the height of the dam by 180 m but also seal its concrete "shoulders" to the rocky banks so that not a single drop of water soaked through. A dependable partnership with suppliers ensures a steady pace for the construction conveyor line. These suppliers include more than 200 enterprises and organizations. [by G. Kokukhin, TASS correspondent from Sayanogorsk] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 12 May 82 p 2] 10272

SHATURA PLANT MODERNIZATION--The pioneer of the GOELRO [State Commission for the Electrification of Russia] Plan, the Shatura GRES imeni V. I. Lenin is to receive a powerful central heating turbine the manufacturing of which is to be completed today by the collective of the Leningrad Metallurgical Plant Association. At present the station built at the dawn of electrification will not only produce electric power but also heat. In the 1920's, when construction started in Shatura on the then large regional "electricity factory," the nation still did not have its own power machine building. The equipment for the plant with a total capacity of 48,000 kilowatts was purchased from English, German and Czechoslovak firms. In the 1970's, Leningrad and Khar'kov manufactured turbines and generators for Shatura and these greatly exceeded the capacity of the former units. The plant's potential has exceeded a million kilowatts and it has become an important element in the USSR Unified Power System. Soviet power engineering has come a great distance from the first plants of the GOELRO Plan to the very large electric complexes. In terms of the generating of electric power, our nation presently holds first place in Europe and second in the world. [by S. Davydov] [Text] [Leningrad LENINGRADSKAYA PRAVDA in Russian 9 Apr 82 p 1] 10272

POWER INTERRUPTIONS--This was the name of the article "What Happened at Balakhna?" published in PRAVDA on 20 February 1982. As the editors have been informed by the USSR Deputy Minister for Power and Electrification, Yu. Semenov, the article was discussed by the board and the criticism was judged valid. The ministry has outlined a program for increasing the dependable operation of the Gor'kiy GRES and for modernizing and reconstructing its equipment. As a result of carrying out the primary measures there has been no instance of shutting down the papermaking equipment at the Balakhna Pulp and Paper Combine due to the lack of steam. The persons guilty of violating the technical operating rules of the power plant and of releasing untreated water into the boilers have been strictly punished. These included: the chief of the production and technical section of the Gor'kiy GRES Yu. Ogolikhin who has been released from his held position and the chief engineer of the GRES V. Tropinin, the chief engineer of Gorenergo [Gor'kiy Power Administration] M. Shchelin and the manager of Gorenergo V. Bitkin who were strictly reprimanded. The Deputy Minister of Railroads V. Gin'ko has stated that as a result of the adopted measures 79 railway cars are dispatched each day with raw materials to the Balakhna Pulp and Paper Combine while the planned level is 75. [Text] [Moscow PRAVDA in Russian 26 May 82 p 3] 10272

TAJIK POWER CONSTRUCTION--The first assemblies of hydropower equipment have begun arriving at the construction site of the prime construction project of the five-year plan, the Baypaza GES in Tajikistan. The Khar'kov Turbine Plant was the first to deliver the inserts for the cone of the suction pipes. An old friendship links the construction workers from the Nurekgesstroy [Nurek GES Construction] Administration with the collective of this enterprise. Again the "worker relay" is in operation. Its threads also extend to Sverdlovsk, Zaporozh'ye and Krasnoyarsk which will also deliver equipment to Baypaza. In order to ensure a high work pace it was decided to conclude a contract for a small "worker relay". Thus, the brigade of concrete workers of Hero of Socialist Labor M. Sharifov is competing with the collective of installation workers of N. Grigor'yev. Both collectives have rich labor traditions. The Sharifov brigade built the Nurek GES from the first cubic meter of concrete to the very end. The installation workers of N. Grigor'yev participated in many construction projects. The "worker relay" is in dependable hands. [by P. Laptev, correspondent of SOTSIALISTICHESKAYA INDUSTRIYA from Dushanbe] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 14 May 82 p 1] 10272

TRANSMISSION LINE CONSTRUCTION--The supports for the Ust'-Ilimsk GES-Kodar power transmission line have "marched" across the Vitim River from the Buryat to the Chita section of the BAM [Baykal-Amur Mainline]. The collective of the Vostoksibelektroset'stroy [Eastern Siberian Power Grid Construction] Trust is building the 200-kilovolt power transmission line and with its aid the construction workers at the Kodar Tunnel will be provided with a reliable power supply. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian 22 May 82 p 3] 10272

EKIBASTUZ POWER LINE--Construction on the 1,150-kilovolt power transmission line is under way along the entire route. This line will link Ekibastuz with the industrial centers of the Urals. The mechanized columns of the Spetsset'stroy [Special Grid Construction] Trust have already set up 1,120 50-meter supports. A little more than 200 supports remain to be installed. The construction workers are trying to equal the leading brigades of the installation workers under V. Arkhipov and P. Klochkov. These have been the initiators of high speed laying of the line. While at the start of the year each of these brigades installed two supports per day, at present it is five and with excellent quality. The substation at Karagay near Kokchetav is being built rapidly. Here the foundations have been readied for the gantries of the distributor equipment and all the basic excavations have been dug. At the same time housing and cultural-service facilities are being built. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian 24 Jun 82 p 16] 10272

ESTONIAN POLLUTION PREVENTION--Work has started on laying the foundation for a new smokestack at the Kokhtla-Yarva TETS. Its designed height is 150 m. The putting of the new smokestack into operation will make it possible to significantly reduce air pollution over the city. At the same time designing is underway for installing special electric filters on each of the six boilers. The experience of the Akhtma TETs where such filters have already been installed has shown that air pollution after completion of construction was reduced to a minimum. The degree of removing smokestack wastes in Akhtma is almost 98 percent. As a total for improving the environment in the urban zone, around 11 million rubles have been allocated for building the new insulation at the Kokhtla-Yarva TETs. According to a preliminary estimate the construction work will be completed in 1987. [by V. Sandratskiy] [Text] [Tallinn SOVETSKAYA ESTONIYA in Russian 19 Feb 82 p 1] 10272

POWER PLANT DELAYS--At present one of the important tasks in Ekibastuz is to complete the third stage of the TETs. According to the schedule approved by the gorispolkom for completing the project less than 2 months remains. At the same time the construction workers, upon the admission of the chief engineer from the main contracting administration Energopromstroy [? Power Industry Construction], K. Kopasov, have fallen greatly behind schedule. Instead of 300 men working on the project there are less than 100. Here they lack equipment and transport. Each day they make their plans but specific measures are not adopted. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian 24 Jun 82 p 16] 10272

EKIBASTUZ PLANT PROBLEMS--In May at the Ekibastuz GRES-1 they expected to complete the fifth power unit with a capacity of 500,000 kilowatts. The boiler was tested, and preparations were carried out for starting up the equipment of the turbine, but the putting of the turbine unit into operation was held up. The fuel supply system No 2 was not ready and installation had just been started on the equipment for the second smokestack. In a word, there is no feeling of preoperational tension at the project. Suffice it to say that the starting up of the turbine equipment has been delayed nearly due to the fact that the client, the Ekibastuzenergo [Ekibastuz Power] Association (manager, Comrade Moshkin) did not concern itself ahead of time with the delivery of fuel. Only at the end of April did the Ekibastuzenergostroy [Ekibastuz Power Construction] Trust (manager, Comrade Filatov) decide upon the general contractor for certain work. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian 24 Jun 82 p 16] 10272

MINGECHAUR POWER CONSTRUCTION--The first shift of the shock watch by the construction workers of the Azerbaijan GRES was completed. The workers and employees from the Mingechaur PMK-11 [Mobile Mechanized Column] of the Dushanbe Soyuzzhilstroy [USSR Housing Construction] Administration under the USSR Ministry of Power and Electrification assembled for a ceremony where the assignments of new apartments were to be presented for the newly completed 60-apartment 5-story building in the power workers' settlement. On the same day, a 50-apartment multistory building was occupied at No 3 Sabir Street; this was built by funds from the executive committee of the Mingechaur City Soviet. Since the start of the year, the city has provided new housing for 210 worker and employee families. By the end of the year another 482 families will move in. During the jubilee year, Mingechaur intends to build and put into operation new housing with a total area of 27,700 square meters including 26,600 square meters using funds of the municipal soviet executive committee. This will be a fine gift from the construction workers to the city's inhabitants for the holiday of peoples' friendship, the 60th anniversary of the formation of the USSR. [by N. Ismaylov, VYSHKA correspondent, from Mingechaur] [Excerpts] [Baku VYSHKA in Russian 15 May 82 p 4] 10272

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FUELS

SIMPLE METHOD DEVISED FOR PUTTING OUT OIL, GAS WELL FIRES

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 24 May 82 p 3

[Article by M. Chetverikov, chief of the Experimental Fire-Fighting Laboratory of the UPO [Fire-Protection Administration] of the Tyumenskaya Oblast Ispolkom UVD [Internal Affairs Administration], and V. Grigor'yev, journalist: "The Attack on Fire"]

[Text] Is it possible to simulate a catastrophe--a burning oil and gas gusher--without visiting the spot and not seeing it with one's own eyes? Don't answer too hastily. It can be done--by means of an ordinary lighter. You snap its mechanism and the gas, on escaping and coming into contact with the spark, bursts into a bright flame. This will be a counterpart of a gusher, reduced 1,000-fold.

It is not difficult now to visualize how, from the far depths of the earth's strata, under a pressure of several hundred atmospheres, an enormous pillar of fire shoots upward, sometimes more than 100 meters high. A burning gusher is a calamity--there are enormous losses, and this violence, which has broken the rocks' control, can be beaten only with the greatest skill and courage.

Comparatively recently, something like 20-25 years ago, there were not in domestic or world practice many well-known specialists in extinguishing gas and oil gushers. A battle (and this word is fully pertinent) with a raging fire lasted for months, and at times longer.

What did they have at their disposal, what methods of extinguishing did the courageous craftsmen have at their command? Primarily, it was an explosion of great force, which swept the flame to the side, broke it into pieces, and freed the well mouth of the flame. Is this a reliable method?

In 1967, not far from Groznyy, a gas and oil gusher blazed up. It was decided to use an explosion. A special lifting crane with a boom reach of more than 20 meters was erected. With its help, a ton of explosive was placed in direct proximity to the well, which was not a simple or safe thing to do. Finally, an explosion was heard--and the gusher continued to blaze.

What was the matter, why didn't the explosion work? It turned out that the shock wave had destroyed the flame, but a scorching cloud formed by the explosion lit the gas and oil mixture again.

A currently existing method that is effective also has been used: the drilling of additional holes. This is a complex matter that requires high skill, precision and, the main thing, much time. A drill rig must be brought in and erected at a distance from the gusher. Then a new shaft is drilled, in order to intercept the "well that has gone berserk" at a given depth. Then it is either covered with a heavy clay mud or it is entirely cemented.

Right now the armament of all large fire departments includes special AGVT's--gas and water extinguishing vehicles. Alas, experience has shown that neither is this a panacea. Indeed, for the operation of just one installation requires many tons of water. And if there is none near at hand?

In October 1980 a gas and oil gusher blazed up at the Fedorovskoye field in Tyumenskaya Oblast. Just to reduce the heat radiation in the area of the fire and to create an environment that was acceptable in the slightest degree for operating fire equipment, an average of 6,000 tons of water was expended per day.

AGVT vehicles were delivered to the stricken facility by helicopter (only one installation can be hauled per flight). When just one of the special machines that had been delivered began to operate, the requirement for water rose still more. In all, in order to extinguish the gusher and to protect fire equipment from heat radiation, about 137,000 cubic meters of water were consumed.

Luckily, not far from there a stream that had not been frozen over yet was flowing, but it also could not meet the requirements in its natural state. And then 1,500 cubic meters of soil were hauled, a temporary dam was built, pump stations installed, and two water lines laid. In order to do this and other preparatory work at the mishap scene, 30 units of various types of equipment were involved: bulldozers, truck tractors, trucks and so on. More than 100 people took part in extinguishing the gusher. And only in 21 days did they succeed in putting out the fire.

And now still another method has appeared, one which IZOBRETATEL' I RATSIONALIZATOR [Inventor and Innovator] (No 8, 1979) described under the heading, "The Invention of the Year." The Higher Engineering Fire-Fighting Equipment School of USSR MVD [Ministry of Internal Affairs] has developed an installation called the SDTF-200, a system for remote extinguishing of gushers. Externally, it is a large grip, which consists of a 10- to 15-meter arm, along which water is fed. A semiring with clamped-on sprayers for streams of water is fastened at the end of the arm. The tractor is supposed to bring this semiring up to the fiery column and then the water-feed system is turned on, putting the gusher out.

The SDTF-200 has many attractive features: the installation is one-twentieth the weight of a jet installation and it consumes little more than 1 percent as much water.

It goes without saying that the proposed system deserves approval, but (alas!) it does not solve all the problems. It is not very easy to control the system in the high heat radiation zone from the tractor. Moreover, the ring itself with the clamped-on sprayers does not always maintain contact with the flame, and some components become deformed. Finally, this installation cannot extinguish a burning "cluster," the spread of which at times exceeds 25 meters.

Scientists of the Hydrodynamics Institute of the USSR Academy of Science's Siberian Division searched for a solution, jointly with specialists of the Fire-Protection Administration of the Novosibirskaya Oblast Ispolkom's UVD. Whereupon workers of the Fire-Protection Administration of Tyumenskaya Oblast Ispolkom's UVD were also actively included in this work.

The Hydrodynamics Institute's Laboratory for Vortex Motion of Liquids and Gases began, at the initiative of Academician M. Lavrent'yev, a detailed study of the nature of vortex flows. The characteristics of vortex formation were discovered as a result of careful experiments. And so, when the scientists, under the supervision of Doctor of Mathematical Physics Sciences B. Lugovtsov, built mathematical models of flows and, by means of them, began to calculate the parameters of vortex rings, the question emerged: can these same rings be put to service in extinguishing gas and oil gushers?

Experiments were begun. First under laboratory conditions, then at a testing ground. It turned out that if a tightly twisted vortex ring is released upwards from the base of a fiery pillar, it snatches the flame and, after tearing it off from the well mouth, raises it upwards. But how to form this aerial shaft?

And that very same "poorly reliable" explosion of the old days is recalled. But now, in order to form a vortex ring, not a ton of explosives but only a few kilograms were needed. It is true that at first there were cases where the flame still penetrated the ring and destroyed it. Therefore, a special flame-extinguishing power was added to the explosives, and, as a result, a reliable method for dealing with gas and oil gushers--called the vortex-power method--was born. Moreover, experience has shown that in the absence of the flame-extinguishing powder, cement can replace it successfully.

The valuableness of the new method consists not only in mobility and a sharp reduction of expenditures but also in much easier execution. It is sufficient to weld or knock together from any handy materials a П-shaped base to one side of the danger zone. Place the explosive and power or cement on it, and then join all this to two cables. Then, going around the flame to the side, hitch these cables on the opposite side to any mobile unit and drag the base to the well mouth. From shelter, contact is made, and the ring formed by the explosion breaks the flame off at the well mouth. And that is all.

Since the year 1977, the new method of extinguishing has passed numerous tests, including tests at the proving ground near Nizhnevartovsk. Recommendations were worked out on which have been placed the signatures of V. M. Titov, deputy director of the Hydrodynamics Institute of the USSR Academy of Sciences' Siberian Division and corresponding member of the AN SSSR [USSR Academy of Sciences] and of A. V. Vyaznikovtsev and N. Ye. Chernukhin, managers of the Fire-Protection Administrations of the Tyumenskaya and Novosibirskaya Oblast Ispolkom UVD's.

But still, not everyone has yet received the full right to use the new method. And indeed, what is surprising is that there are no opponents, every one is for it. For example, the USSR MVD's Main Administration for Fire Protection assessed it highly in a document dated 8 July 1981: "...the effectiveness and simplicity of the new method for extinguishing gushers, development of the scheme for remote delivery of the fire-extinguishing means when extinguishing single or grouped gushers at well clusters, and the methodology for calculating the fire-extinguishing means deserve attention."

But this is the very same Main Administration for Fire Protection which 2 days later, on 10 July that is, proposed in another document, "to coordinate the question of the possibility of conducting tests in 1982 at a Glavtyumenneftegaz [Main Administration of the Oil and Gas Industry of Tyumenskaya Oblast] base of Minnefteprom [Ministry of Petroleum Industry]." It must be understood that the new method can receive its certification at best in a year.

The Tyumen' geologists have calculated that at times up to 100,000 rubles are now being spent on transport expenditures alone for hauling flame-extinguishing means and people just for one fire. And there are incalculable losses from the combustion of valuable raw materials, the construction of various temporary operating structures....

If one adds up all these expenditures and recalls that the new method requires, in all, one suitcase of explosives and two or three people, then is it possible to find justification for protracted tests?

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CSO: 1822/208

DIFFICULT DRILLING CONDITIONS HOLD UP SEARCH FOR MESOZOIC OIL IN AZERBAIJAN

Baku VYSHKA in Russian 21 May 82 p 2

[Article by S. Astvatsaturov, senior scientific worker of AzNIPIneft' [Azerbaijan State Scientific-Research and Design Institute for the Oil Industry]: "Raise Drilling Work Quality"]

[Text] Where should Mesozoic oil be sought?

Extremely important questions connected with prospecting for new oil and gas fields, primarily in Mesozoic deposits, have been discussed in VYSHKA's pages. The authors shared with readers their opinions and complained completely correctly that in recent years geological and geophysical research and prospecting drilling have not yielded appreciable results. Actually, promising Mesozoic fields and Eocene deposits still remain prospecting targets on Azerbaijan's dry land.

It should be considered that, although in carrying out these tasks, large amounts of prospecting drilling have been contemplated, drilling organizations have not, nevertheless, fulfilled the planned indicators for various reasons. Therefore, there are still not sufficient bases today to draw any conclusions or to change previously planned programs for studying the republic's various geological regions.

The opinion of some geologists and geophysicists that apparently a sharp break occurred in folding along the Mesozoic and the Paleogene and there was a substantial increase in the thickness of Paleogene deposits, as if to prevent the discovery of Mesozoic deposits, is not supported as yet by any kind of factual data.

It is known that a large restructuring of folding occurred on Azerbaijan territory in the Tertiary period, at the end of the Miocene, as a result of which its younger layers in the Caspian area and in Gobustan lie with sharp unconformity on more ancient formations, and in the Kirovabad region and the area between the Kura and Iori Rivers the Upper Pliocene lies sharply unconformably on the eroded Maykop and Miocene. Basically, no other large unconformities are observed in relation to the Tertiary and the tops of the Upper Cretaceous. Only in the side portions of depression zones can unconformities between the Paleogene and the Upper Cretaceous (the Amirarkh, Dal'mamedly and others) have local appreciable manifestation.

No sharp changes are observed in the structure of the Maylop and Eocene deposits or within the Maykop strata in Azerbaijan. One can speak only of the strong tectonic complexity of the area, which is situated along the southeastern periphery of the Greater Caucasus, as a result of which, in some cases, the soft strata of the Maykop suite squeezed out into the dome portion of the structures and the fault zone of certain uplifts.

As for the almost two-fold increase in thickness of the Tertiary deposits in the Central and Southern Gobustan that has been proposed, it should be noted that there are still no factual data of any kind to confirm this opinion, since it has been established that in holes of Nardaran-Suleyman, even where there is a 900-meter thickness of the Eocene and steep dip angles of the well formations, Cretaceous deposits could not be found.

It is more likely the case that the data about the depths of deposition of the Upper Cretaceous were taken just from geophysical data and they proved to be overstated. The facts indicate that in Central Gobustan, the Yevlakh-Agdzhabed depression, the area between the Kura and Iori Rivers, and the Adzhinoura, Upper Cretaceous deposits that are more promising in regard to the presence of oil and gas can be found in their submerged portions basically only at depths of more than 5,000-5,500 meters. This presupposes a need to pay special attention to the technology of the drilling operations, since almost the whole wide zone within the republic that lies between the Greater and the Lesser Caucasus is distinguished by extremely complicated geological structure and difficult conditions for sinking holes. For this reason, prospecting wells often have not been brought down to the designed level. That is why the problem of the Mesozoic and Eocene oil depends greatly upon raising the quality of the drilling operations conducted.

As for the question about searching for Mesozoic oil, then it should be stated that there is an integrated design for exploring the Mesozoic during the 11th Five-Year Plan, which the Ministry of Petroleum Industry has approved. Now it is a matter of drilling over the structures approved by this design, finding and studying promising horizons, and planning ways for conducting further prospecting and exploratory drilling for oil and gas.

11409
CSO: 1822/208

METHODS FOR DEVELOPING VAST GAS-HYDRATE RESERVES OF NORTH DISCUSSED

Moscow IZVESTIYA in Russian 21 May 82 p 3

[Article by N. Cherskiy, chairman of the Presidium of the Yakutsk Branch of the USSR Academy of Sciences's Siberian Division and academician, and V. Tsarev, manager of the laboratory of the Institute of Physical and Equipment Problems of the North and doctor of geological and mineralogical sciences: "Solid Gas"]

> [Text] This is a new type of useful mineral discovered in the earth's crust by Soviet researchers.

The word combination, "solid gas," still sounds unusual, but,possibly, with time, the new fuel will get a new name. We are busy right now with something else--how to put it to the national economy's service.

Just what is "solid gas"? It is gas hydrate, solid compounds of water and natural gas, but in physical composition it is externally something like ice. One cubic meter of such "ice" liberates 160-180 cubic meters of natural gas.

Gas hydrates were obtained under laboratory conditions 180 years ago. A century passed, and when the industrial recovery of gas had begun they called attention to themselves in a most perfidious way. They formed plugs in gas lines and chemical apparatus, they stopped up pipes, and they caused much bother during gas transport over multikilometer arterials.

In the last 30-35 years research has begun to be performed that is aimed at using gas hydrates in various industrial processes--for getting fresh water, for gas storage, and so on. Our country was the first in the world to begin the study of natural gas hydrates as useful minerals. It was found that the geography of solid-gas deposits on the continents coincides practically with the zone of distribution of permafrost. This is a big area--about 40 million square kilometers.

In the USSR there are gas-hydrate deposits in the northwest of the European part and in West and East Siberia. A large portion of the solid gas is concentrated in East Siberia. But the greatest density of deposits is expected in the north of West Siberia.

The seas that wash our country also are rich in gas hydrate deposits. Nature created astonishingly favorable conditions here for accumulating solid gas.

Research results yield a basis for supposing that the natural gas reserves in dryland gas-hydrate deposits are comparable with the reserves of ordinary gas deposit fields. And in the sediments on the bottom of the World Ocean, the amount of methane that is included in gas-hydrate deposits will surpass severalfold the total resources of all other fuel found on dry land.

And so there is a new type of fuel in nature's storehouse. But how to extract it? A number of operating schemes have been proposed for solving this task. One of them calls for breaking down the producing formation, raising the rock mass to the surface, and extracting the useful mineral. This scheme, which we have developed, is more effective for operating offshore fields that lie at a depth of less than 100 meters from the bottom of the water body.

Another scheme calls for heat interaction on the formation in which the solid gas has been deposited. When heated it "thaws," breaking down into ordinary natural gas and water. And the gas later is extracted on top. In this case, it is possible to use thermal waters, and also production waste heat with a temperature of 30-70 degrees C.

Certain types of deposits in which the pores of the host rocks are filled with free gas, along with the hydrates, can be developed with the methods widely used for operating ordinary gas fields. Among these are gas and gas-hydrate fields. Expenditures for operating them are about the same as for ordinary gas fields. This was indicated for the first time in world experience in the development of the Mossoyakh gas and gas-hydrate field, which is situated in the north of Krasnoyarskiy Kray.

Offshore field development will, of course, be more expensive than on dry land, but in this case the cost of recovering the gas will not exceed the level of world natural-gas prices.

It can be asserted that the development of gas and gas-hydrate fields on dry land is economically justified even today. Therefore, it is necessary to promote interindustry scientific-research and experimental-design work immediately on a broad scale and also to begin to prospect for and explore gas-hydrate fields in West and East Siberia and on the offshore shelves.

And, in conclusion, a few words about other ways to use gas hydrates. They can be used in purifying and desalting natural and industrial waters, for extracting valuable components from aqueous solutions, and for other purposes. A substantial reduction in energy expenditure per unit of final output is an important advantage of gas-hydrate industrial processes in comparison with the methods now widely used.

11409
CSO: 1822/208

GAS-CONDENSATE FUELS NOT USED FULLY IN FUEL-IMPORTING YAKUTIA

Moscow EKONOMICHESKAYA GAZETA in Russian No 16, Apr 82 p 15

[Article by V. Basonov, chief engineer of Yakutgazprom [Yakutsk Gas Industry Association] and A. Lavrik, lecturer of the Chelyabinsk Polytechnical Institute and candidate of engineering sciences: "Why Do We Bring Firewood into the Forest?"]

[Text] As is known, liquid hydrocarbons which have been named gas condensate are separated out during gas recovery. Also, gasoline and boiler and diesel fuels can be obtained directly from the condensate with relatively uncomplicated technology, directly in the area of recovery.

Yakutgazprom, with the help of the industry's Mingazprom [Ministry of Gas Industry] laboratory at the Chelyabinsk Polytechnical Institute, has developed industrial schemes for obtaining light boiler fuel from gas condensate, unethylated gas-condensate gasoline with an octane number of 76, and wide-fraction gas-condensate fuel for diesel engines.

An installation for processing condensate has been designed and built at the Mastakhskoye field. So far, fewer than 30 cubic meters of raw gas condensate are being processed here per day, and in this case, the output of gasoline is 25 percent, while the remainder is boiler fuel.

What is the quality of this gasoline? Research has established that it possesses a number of advantages over market-grade A-76 automotive gasoline. Fewer scale deposits are formed in the engine from its use. This has a positive effect on the life of an engine and on the reliability of its operation.

The light fraction content, that is, the fraction with increased evaporativity, of gas-condensate gasoline, is especially important for operating equipment in the north and in low-temperature situations: starting is easier, warm-up time is shorter, and the engine has better acceleration.

The boiler fuel obtained from the condensate also has its advantages: it behaves better at low temperatures, gives somewhat greater combustion heat, has reduced ash content, and is less damaging by way of corrosion to the equipment of boilers that operate on this fuel. This simplifies the operation of boilerhouse installations.

Specimens of gas-condensate fuel have also passed laboratory tests.

This year the association plans to expand the output of fuel made from gas condensate. It would seem that the new fuel should find wide demand. Indeed, it is much cheaper than imported fuel, and its quality is even higher. If even a portion of the demand of Yakutia's enterprises for liquid fuel will be satisfied through local resources, that will save the huge sums that are now being spent to deliver gasoline and diesel and boiler fuel to the autonomous republic.

And the problem of realization of gas-condensate product has already arisen before the association. As before, customers are importing fuel over thousands of kilometers, while the development of local production is being hampered because of marketing difficulties. Is this economical? Indeed, given the opportunities that are opened up by processing gas condensate directly at the places of recovery, the exclusive use of imported fuel is the same as bringing firewood into the forest.

It would seem that planning and supplying organizations should look into this problem attentively. Solving it will bring a great saving of fuel and power resources to Yakutia.

11409
CSO: 1822/208

EARLY WORK AT YAMBURG GAS-CONDENSATE FIELD INCLUDES DOCK CONSTRUCTION

Moscow KRASNAYA ZVEZDA in Russian 23 May 82 p 1

[Interview with G. Zatsenko, chief of the Central Production-Control Service of the Gas-Field Administration of Nadymgazprom, with a KRASNAYA ZVEZDA correspondent: "Yamburg Is Being Started...."]

> [Excerpts] The first landing of construction workers at the unique Yamburg gas-condensate field, which is located beyond the Arctic Circle, was reported in KRASNAYA ZVEZDA on 7 March of this year. And today work on the erection and the development of facilities for the first settlement is going on full blast.
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> One of the pioneers of Yamburg--chief of the Central Production-Control Service of the Gas-field Administration of Nadymgazprom [Nadym Gas-Industry Association] G. Zatsenko--tells us, at the request of KRASNAYA ZVEZDA's correspondent:

"Gas reserves at the new field are counted in the thousands of billions of cubic meters. Right now this is second to the Urengoy giant, the largest storehouse of 'blue gold' in the world. Its reserves are located on the Tazov Peninsula, in places with an extremely severe climate, in the so-called subarctic latitudes. Temperatures of -60 degrees are not rare here. Under your feet is permafrost. The working conditions and life in these places are, of course, complicated. Especially during the building up of the field's facilities.

"Take a look at the map: our settlement is located not far from the shore of the Ob' Gulf. The most necessary things are now being rushed here by winter roads and air. But for the start of the broad campaign here, thousands of tons of various kinds of freight are needed: machinery, equipment and materials....And these can be sent only by waterways. You see this fine sinuous line on the map? This is the Nyudyamongotoyekopa. You cannot even call it a river. So it is a creek. It heads for the Ob' Gulf but falls into the swamps. We decided to dig through here a 200-meter canal 60 meters wide so barges with freight can approach the settlement. But it is easy to say 'to dig through.' This is the Arctic! The most difficult section--about 140 meters--is an unbroken monolith cemented by the cold, and in hardness it cedes nothing to granite.

"But nevertheless the construction workers are undertaking the operations. Powerful machines along the intended canal are removing hundreds of tons of ice from on top and are baring the soil. Last week, after blasting operations, the excavators and bulldozers undertook to deepen the canal.

"In the settlement a boilerhouse is already in operation, a dining room has been opened, and a store is being readied to accept its first customers. During the summer navigation season the first barges with cargo will come to the dock that is being erected."

11409
CSO: 1822/208

BRIEFS

HIGH KOMI OIL RECOVERY--Ukhta--The Tebuk Oil Recovery Administration of Komineft' [Komi ASSR Oil Industry Association] has completed the oil recovery plan for the first 5 months of the year. It took about 100,000 tons of fuel above the goal from the ground. This success resulted from the rapid introduction of new wells into operation and the skillful use of the older-well inventory. [By V. Krukovskiy] [Extract] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 29 May 82 p 1] 11409

TRANSPORTATION FOR URENGOY GEOLOGISTS--Urengoy--The collective of the motor transport enterprise of Urengoyneftegazgeologiya [Urengoy Oil and Gas Geology Association] is successfully hauling freight to the summer camps. More than 35,000 tons of freight, which is above the plan goal, have been hauled over the winter roads that have been cleared. Delivering materials and equipment to the drill rigs ahead of schedule will enable the drillers' work to be supported reliably in the summer, when there are no roads and helicopter is the only transport tie with them. [By G. Raylo, RSFSR Mingeo [Ministry of Geology] Press-Center Correspondent] [Extracts] [Moscow SOTSIALISTICHESKAYA GAZETA in Russian 29 May 82 p 1] 11409

UZBEK PNEUMATIC-DRIVE PUMP--Uzbek SSR--Specialists of the Andizhan Design-Development Office of Soyuznefteavtomatika [All-Union Association for Oil-Industry Automation] have built a pneumatic-drive pump for creating a pressure differential in a hydraulic system. Existing direct-action pumps and pumps with gate-valve switching gear are complicated in manufacture. The basic excellence of the Andizhan innovation is that here the switching gear has been chosen on the basis of pneumatic automation elements and is a generator of pneumatic impulses. This greatly simplifies design of the pump and the reliability of its operation under any conditions. The pneumatic-drive pump is recommended for use in various branches of industry--the oil, gas and petrochemical industries. [By V. Zhuravskiy] [Text] [Baku VYSHKA in Russian 21 May 82 p 2] 11409

EAST TURKMEN GAS REGION--A new gas-bearing region has been opened up in eastern Turkmenistan. Gas has been obtained at a depth of about 3 kilometers from the promising Malay area. This is the second field developed in the Karakumy since the start of the 11th Five-Year Plan. "The Main Directions for Economic and Social Development of the USSR" planned that recovery of the valuable fuel would be brought up to 81-83 billion cubic meters within the republic during the 11th Five-Year Plan. This will be achieved basically through the development of new fields, particularly the mightiest in Central Asia--the Daulet-Abad. By the end of this five-year plan this field will yield up to 22 billion cubic meters of gas. Its role will be all the more importance since the new field's reserves will gradually compensate for the natural reduction of the "blue fuel" at Shatlyk. Right now Turkmenistan is producing every sixth cubic meter of gas recovered in the USSR. Karakumy gas is going to the European portion of the USSR over the Central Asia-Central Economic Region gas pipeline. Uzbekistan and Kazakhstan are receiving it. [By Turkmeninform] [Excerpts] [Ashkhabad TURKMENSKAYA ISKRA in Russian 21 May p 2] 11409

AZERBAIJAN OIL WELL RESTORED--Ali-Bayramli--The oil gusher at well No 130, which had been drilled into the pay at the Muradkhanli field, struck again after a short interruption. Its daily flow rate, according to preliminary data, was much more than before, amounting to several hundred tons. As is known, at the start of April water had suddenly encroached at No 130. As the geologists assert, this was a regular phenomenon for Muradkhanly. In order to restore the well, Ali-Bayramli drillers carried out complicated technological operations at a high quality level. The brigade of testers under foreman R. Bakhshiyev and A. Akhmedov labored well. Under exceptionally dangerous conditions, the drill pipe was unscrewed and the well mouth was equipped with a tubing head. In order to prevent ignition of the crude, the operation was performed without any welding. Tubing was lowered into the well to a depth of 2,500 meters, and the well-completion process was started. With regular application of force, a powerful oil-gusher struck from No 130, as if it were in a rage. The testers, especially drillers G. Agayev and A. Bayramov, geologist I. Imanov, chief engineer of the Ali-Bayramli Drilling Administration R. Veliyev and others, acted with precision and coordination. Their efforts managed to prevent an uncontrolled flow. The powerful stream of fuel was guided into the steel channel of an oil pipeline. "No 130," says chief of the technological section of Azneft' [Azerbaijan Oil Production Association] Kh. Mirzoyev, who participated in its completion, "is the most productive in the history of the Muradkhanly field. It has once more confirmed the high promise of this area and simultaneously revealed some peculiarities of its formations." [By S. Garayev] [Excerpt] [Baku VYSHKA in Russian 14 May 82 p 1] 11409

BUZACHI DERRICK-BUILDING SPEEDED--Shevchenko--The drillers had to help the derrick erectors in order to speed up the date that the wells at the Karazhanbas oilfield on the Buzachi Peninsula in Western Kazakhstan are converted to operational status. An original technology for assembling drill rigs, using slip-into-place modules, was proposed. Usually, when transferring to a new penetration point, the drill rigs are transported by separate pieces. The workers decided to arrange the equipment in large modules, and, in passing, they fabricated an additional module for the slush pump. This most labor-intensive portion of the installation is erected ahead of time at the site of the future well. All the utilities and service lines are brought up to it. Now it is sufficient to haul here the drill rig, which completes the operation, and in 3 hours the bit is turning again, dipping deeper into the rock. [Text] [Baku VYSHKA in Russian 8 May 82 p 1] 11409

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COUNCIL OF MINISTERS PUBLISHES PIPELINE PROTECTION RULES

Moscow SOBRANIYE POSTANOVLENIY PRAVITEL'STVA SOYUZA SOVETSKIKH SOTSIALISTICHESKIKH RESPUBLIK in Russian No 4, 1982 pp 74-82

[Decree No 20 of the USSR Council of Ministers on Problems Associated with Protecting Main Pipelines Transporting Liquid Ammonium]

[Text] The USSR Council of Ministers hereby resolves:

To extend, to main pipelines transporting liquid ammonium, the Rules Governing the Protection of Main Pipelines approved by decree No 341 of the USSR Council of Ministers, 12 April 1979 (SP SSSR, No 13, 1979, Article 85) and published in revised form (attached).

Chairman of the USSR Council of Ministers
N. Tikhonov

USSR Council of Ministers Business Manager
M. Smirtyukov

Moscow, The Kremlin. 24 December 1981, No 1214.

Approved by Decree No 341 of the USSR
Council of Ministers, 12 April 1979 (in
the wording of USSR Council of Ministers
decree No 1214, 24 December 1981)

Rules Governing the Protection of Main Pipelines

1. The rules below are introduced with the purposes of ensuring the integrity of main pipelines (including oilfield and inter-oilfield pipelines and collecting mains) transporting petroleum and petroleum products, natural and artificial hydrocarbon gases, condensates, liquefied hydrocarbon gases, liquid ammonium, unstable gasoline and condensate and other liquefied hydrocarbons, of creating normal conditions for the operation of these pipelines and of preventing accidents on them.

2. Main pipelines* to which these rules apply include:

a pipeline together with its branches and loops, shut-off fittings, crossings over natural and manmade obstacles, pumping and compressor stations, connecting units, treatment plant outlet and intake units, gas consumption measuring units, condensate collectors and methanol injection devices;

devices offering electrochemical protection to pipelines against corrosion, operational communication lines and structures, pipeline remote control resources;

power transmission lines, power supply facilities, remote shut-off fitting control units and devices offering electrochemical protection to pipelines;

firefighting resources, antierosion and protective structures of pipelines;

containers for the storage and degassing of condensate, earthen reservoirs to contain accidental spills of petroleum, petroleum products, condensate and liquefied hydrocarbons;

structures of the pipeline operating service;

permanent roads, helicopter pads located along the pipeline route and approaches to them, and pipeline identification and location warning signs;

main and intermediate transfer and inlet pumping stations, tank parts and compressor and gas distribution stations;

above-ground gas storage stations; onloading and offloading platforms and moorings;

petroleum and petroleum products heating points;

liquid ammonium distribution stations.

3. Pipeline routes are marked by reinforced concrete or wooden identification signs (bearing inscriptions) mounted 1.5-2 meters above the ground.

4. Places where pipelines cross navigable and log-rafting rivers and canals are marked on the banks by warning signs in accordance with the USSR Regulations on Inland Water Transport. Warning signs are installed by the enterprise (organization) operating the pipelines, on coordination with the basin waterway administrations (canal administrations), and their locations are entered by these administrations into the shipping situation list and into navigational charts; the routes of marine pipelines are indicated in the Notices to Mariners, and they are applied to marine charts.

5. In places where pipelines cross motor highways of all categories, the appropriate road sign prohibiting the parking of transportation is installed.

6. Information on the actual location of the pipeline (the builder's survey), drawn up in the established order by the construction and installation organization and

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*Referred to subsequently as "pipelines".

the client, must be submitted to the executive committees of the rayon (city) soviets of people's deputies so that this information could be applied to regional land use maps.

The executive committees of the rayon (city) soviets of people's deputies issue information on the location of the pipeline to interested enterprises, organizations and institutions.

7. To ensure normal operating conditions and to exclude the possibility of damage to pipelines (however they are laid), protection zones are established:

along pipeline routes--in the form of land areas delimited by conditional lines extending parallel to and 50 meters from the axis of the pipeline in both directions; on agricultural land the protection zone is delimited by conditional lines parallel to and 25 meters away from the pipeline axis in each direction;

along the routes of multiple pipelines--in the form of a land area delimited by conditional lines parallel to and extending 50 meters from the axis of the outer pipelines in each direction; on agricultural land the protection zone is delimited by conditional lines parallel to and extending 25 meters from the axis of the outermost pipelines in each direction;

along underwater crossings of pipelines transporting liquid ammonium--in the form of a water area extending from the water surface to the bottom and contained between parallel planes located a certain distance from the axis of the outermost pipelines set in each concrete case depending on the local conditions by the ministry or department operating the pipeline, on coordination with the USSR Gosstroy and the USSR Ministry of Land Reclamation and Water Resources; for pipelines transporting other products this area takes the form of the water area from the surface of the water to the bottom enclosed between parallel planes located 100 meters away from the axis of the outermost pipelines on each side;

around containers for the storage and degassing of condensate and earthen reservoirs for accidental spills of petroleum, petroleum products, condensate and liquefied hydrocarbons--in the form of a land area delimited by an unbroken line extending 50 meters in all directions from the boundaries of the territories of such facilities;

around main and intermediate transfer and onloading pumping stations, tank parks, compressor and gas distribution stations, gas consumption measuring units, onloading and offloading platforms, underground gas storage stations, petroleum and petroleum product heating points and liquid ammonium distribution stations--in the form of a land area delimited by an unbroken line extending 100 meters in all directions from the boundaries of the territories of these facilities.

8. Land areas designated pipeline protection zones are not confiscated from land users, and they are utilized by the latter for agricultural and other operations, with mandatory observation of the requirements of these rules.

9. Land users intending to conduct field agricultural operations in pipeline protection zones must provide prior notification to the enterprise (organization) operating the pipeline that harvesting and planting operations are to begin.

10. On irrigated land located within pipeline protection zones, operations associated with temporary flooding of land are conducted as agreed upon by the land user and the enterprise (organization) operating the pipeline.

11. The following are prohibited in pipeline protection zones without the written consent of the enterprises (organizations) operating the pipelines:

a) erection of any building or structure;

b) the planting of all species of trees and shrubs, storage of feed, fertilizer and materials, the stacking of hay and straw, the location of picket lines, the maintenance of cattle, creation of fishing grounds, fishing, the taking of aquatic animals and plants, installation of watering sites and the cutting and procurement of ice;

c) erection of vehicle crossings over pipeline routes, installation of parking areas for motor transport, tractors and machinery, and the location of collective orchards and vegetable gardens;

d) the conduct of land reclamation operations and erection of irrigating and water drainage systems;

e) all earth-moving, construction, installation, blasting and earth leveling operations;

f) the conduct of geological surveying, exploratory, geodesic and other investigative operations involving the drilling of wells and bore pits and the taking of earth samples (with the exception of soil samples).

Enterprises and organizations receiving written consent to conduct such operations in pipeline protection zones are obligated to perform them in compliance with conditions ensuring preservation of the pipelines. The conditions for operations conducted within pipeline protection zones are established by the ministry or department to which the enterprise (organization) operating the pipelines belongs (when construction work is involved, the consent of the USSR Gosstroy is required).

Written consent for blasting operations in pipeline protection zones is given only after the appropriate materials foreseen by the Unified Rules of Blasting Operation Safety approved by the USSR State Committee for Supervision of Safe Working Practices in Industry and for Mine Supervision, are furnished by the enterprise (organization) performing these operations.

12. In the case where it is established that the technical condition of the pipeline requires the performance of repairs with the purpose of preventing possible damage, the enterprise (organization) operating the pipeline has the right to temporarily limit (until such time that repairs are completed), after first notifying the land users, the conduct of operations indicated in paragraphs 9, 10 and 11 of these rules, within the limits of the segment (facility) of the pipeline requiring repair. The dimensions of such an area are equivalent to the minimum distances from the axis of the pipeline (from its facilities) to cities and other population centers, as established by the appropriate construction norms and by the rules of planning main

pipelines approved by the USSR Gosstroy, and by the rules of planning and erecting main pipelines to transport liquid ammonium, approved by the appropriate ministries and departments of the USSR on coordination with the USSR Gosstroy.

For multiple pipelines, these distances are determined from the axis of the outermost pipelines.

13. All actions which may disturb the normal operation of pipelines or cause their damage are prohibited within pipeline protection zones, and particularly:

a) moving, burying and damaging identification and warning signs and monitoring-and-measuring stations;

b) opening hatches, gates, and doors to unmanned cable communication amplifying stations, enclosures of line equipment units, cathode and drain protection stations, line and inspection shafts and other line units, opening and closing valves and slides, and turning communication resources, power supplies and pipeline remote control equipment on or off;

c) all dumping and disposal of acid, salt and alkaline solutions;

d) tampering with river bank stabilizing structures, water flow control devices, earthen and other structures (devices) protecting pipelines from destruction and the adjacent territory and surrounding locale from accidental spills of the transported product;

e) dropping anchor, traveling with lowered anchors, chains, logs, tuck nets and trawls, and conducting channel deepening and dredging operations;

f) starting fires and installing any sort of uncovered or covered fire sources.

14. Within the limits of the distances from pipelines and their facilities indicated in Paragraph 12 of these rules, all measures connected with the gathering of people not engaged in operations for which permission is obtained in the established order are prohibited.

15. The following are permitted for enterprises (organizations) operating pipelines:

a) travel of motor transport and other equipment to the pipeline and its facilities for maintenance and repairs in accordance with traffic patterns agreed upon by the land user and the agricultural administration of the executive committee of the rayon (city) soviet of people's deputies.

If pipelines are located in the territory of preserves and special objects, the appropriate organizations must issue passes to workers servicing these pipelines for the purposes of making inspections and repairs at any time of the day;

b) the digging of bore pits within the limits of a protected zone for the purposes of checking the quality of pipeline insulation and the condition of electrochemical corrosion protection, and the conduct of other earthmoving operations necessary to support normal operation of pipelines, with prior notification of the land user concerning such work (not less than 5 days before the work begins).

c) removal of trees in support of measures to clean up after accidents on pipelines passing through forests, followed by appropriate drafting of logging records and removal of logging wastes from areas of logging.

When necessary, pipeline operating enterprises (organizations) may fell trees in pipeline protection zones in the course of routine maintenance, followed by the drafting of logging records. Wood obtained in this fashion will be used by the indicated enterprises (organizations) to satisfy their own needs, and wood they do not utilize is to be transferred to forestry enterprises to be put up for sale in the established order.

16. In order to permit overhauls and reconstruction of pipelines and to erect crossings over them, pipeline operating enterprises (organizations) must be permitted temporary use, in the established order, of land areas of a size foreseen by the existing norms of allocating land for pipeline construction.

Repairs on pipelines passing through commercial fishing basins must be coordinated with local fish protection organs, except for operations elicited by an emergency situation on the pipeline.

17. When a pipeline protection zone overlaps with a railroad or motor highway right-of-way or with the protection zones of electric power transmission lines and other objects, operations associated with the use of these objects on overlapping portions of territory must be performed with the mutual consent of the interested parties.

18. When pipeline routes pass through state forest land, pipeline operating enterprises (organizations) must provide telephone or radio communication between the pipeline routes and the forestry service.

19. Civilians discovering damage to a pipeline or the leakage of a transported product are obligated to immediately report this to the pipeline operating enterprise (organization) or the executive committee of the local soviet of people's deputies.

20. In the event of an accident on a pipeline, the pipeline operating enterprise (organization) must take immediate measures to correct the problem, and simultaneously inform the executive committees of local soviets of peoples deputies and enterprises (organizations) located in the territory on which the accident occurred.

21. After performing planned or emergency repair and reconstruction operations on pipelines, pipeline operating enterprises (organizations) are obligated to compensate land users for losses caused by these operations, and to return land in the vicinity of the operations to a condition suitable for further use as intended.

Losses to land users are determined in the order foreseen by Decree No 636 of the USSR Council of Ministers, 9 August 1974, "On Compensating for Losses to Land Users and the Loss of Agricultural Production Due to Confiscation of Land for State or Public Needs" (SP SSSR, No 17, 1974, Article 97).

22. Operations conducted to repair damage to pipelines and involving the removal of road pavement are performed by the manpower and resources of the pipeline operating enterprises (organizations) following coordination with the appropriate road maintenance and construction organs.

With the consent of road construction and maintenance organs, damage to roads may be corrected by these organs at the expense of the pipeline operating enterprises (organizations).

23. Residential complexes (population centers), industrial and agricultural enterprises, separately standing buildings and structures (residential and nonresidential) may be erected near pipelines, on the condition that the minimum distances from the axis of a pipeline (or its facilities) to the structures are observed, as foreseen by the appropriate construction norms and rules of planning main pipelines, approved by the USSR Gosstroy, and by the rules of planning and building main pipelines for transportation of liquid ammonium, approved by the appropriate ministries and departments of the USSR on coordination with the USSR Gosstroy.

When the appropriate organs examine petitions to use land for these purposes, the locations of the objects of construction must first be coordinated with pipeline operating enterprises (organizations).

24. A pipeline operating enterprise (organization) and organs of the Gosgaznadzor [not further identified] and the State Committee for Supervision of Safe Working Practices in Industry and for Mine Supervision have, within their competency, the right to halt operations performed in violation of the requirements of these rules within a pipeline protection zone and within the limits of distances equal to the minimum distance from the axis of the pipeline (from its facilities) to cities and other population centers established by the appropriate construction norms and rules for the planning of main pipelines, approved by the USSR Gosstroy, and by the rules of planning and building main pipelines for transportation of liquid ammonium approved by the appropriate ministries and departments of the USSR on coordination with the USSR Gosstroy.

25. Pipelines themselves are serviced and protected by linemen employed by the pipeline operating enterprises (organizations).

26. The executive committees of local soviets of people's deputies and organs of the USSR Ministry of Foreign Affairs are obligated, within the limits of their competency, to render maximum cooperation to pipeline operating enterprises (organizations) in ensuring that all institutions, organizations, enterprises and citizens satisfy the requirements of these rules, and in rendering assistance in accident control and recovery on pipelines.

27. Officials and citizens guilty of violating the requirements of these rules are to be punished in the established order.

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END

JPRS 81930

5 October 1982

USSR Report

ENERGY

No. 116

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JPRS 81930

5 October 1982

USSR REPORT

ENERGY

No. 116

CONTENTS

ELECTRIC POWER

Domestic Use of Electric Power
(L. V. Yegiazaryan, P.S. Manukyan; PROMYSHLENNOST'ARMENII, No 4, 1982) 1

Leningrad Mining Institute Studies Thermal Heat Processes
(V.Molchanov, V. Senin; PRAVDA, 30 Jun 82) 8

Organizational Problems Delay Construction on Neryungri GRES
(Ye. Panov, L. Rybakovskiy; SOTSIALISTICHESKAYA INDUSTRIYA, 15 Aug 82) 12

Second Steam-Gas Unit Now Operational at Moldavian GRES
(L. Dmitriyev; SOVETSKAYA MOLDAVIYA, 1 Aug 82) 15

Lessons of Ekibastuz GRES-1 Can Help in Building GRES-2
(S. Stepanov; EKONOMICHESKAYA GAZETA, Aug 82) 18

Solar Energy Institute in Ashkhabad
(V. Svirin; SOVETSKAYA KUL'TURA, 8 Jun 82) 21

Solar Conversion Station in Kara-Kum Desert
(V. Knyazev, A. Tychinskaya; TRUD, 9 May 82) 27

Solar Conversion Operations in TuSSR Desert
(A. Blokhnin, V. Gavrichkin; IZVESTIYA, 25 Jun 82) 29

Wind Power Exploited in Azerbaydzhan
(VYSHKA, 16 May 82) 31

Briefs
- Peat Found in Latvia 32
- First Synthetic Fuel Facility 32
- Solar Energy Facility 32

First Synthetic Fuel Facility 32
Armenian Solar Energy Facility 33

FUELS

Kemerovo People's Control Group Finds Much Abandoned Metal in Coal Mines
(S. Vinogradov; PRAVDA, 10 Jun 82) 34

New Process Could Prevent Coal Losses During Transport
(V. Kladchikhin; SOTSIALISTICHESKAYA INDUSTRIYA, 24 Jun 82) 37

Permanent Approach Track Needed at Borodino Mine
(B. Pichugin; EKONOMICHESKAYA GAZETA, Aug 82) 40

Increasing Ash Content of L'Vov-Volynskiy Coal Not Treated Properly
(L. Sotnik; SOTSIALISTICHESKAYA INDUSTRIYA, 15 May 82) 43

Transbaykal Coal Mines Need More Workers
(V. Gorlov; PRAVDA, 15 Jun 82) 47

Greater Industrial Use of Bitumens Urged
(A. Zeninskiy; SOTSIALISTICHESKAYA INDUSTRIYA, 15 May 82) 49

Neryungri Miners Plagued by Dumptruck Problems
(P. Rozentul', SOTSIALISTICHESKAYA INDUSTRIYA, 20 Aug 82) 51

Briefs

River Transport Increases 53
Miners Surpass Quota 53
Construction Status in Sharypovo 53
Miners Ahead of Schedule 54
Mechanization Boosts Output 54
New Mine Car Proposed 54
Half-Megaton Coal Output 55
Neryungri Passes Fifth Megaton 55
Coal Output Surpasses Plan 55
Miners Ahead of Schedule 55
Cheap Fuel 55
Mining Reports 56
More Mining Reports 56

PIPELINES

Construction Minister Details Pipeline Progress
(B. Ye. Shcherbina Interview; PRAVDA, 21 Aug 82) 57

Pipeline Construction Progress Report Given 59
(PRAVDA, 13 Aug 82) ....

Welding Begins in Tyumen, by V. Lisin
Gas Pumping Station under Construction, by R. Sabirov
Swamp Vehicles Created, by A. Kurkov

Turkmenistan Gas Pipeline Construction Progress Outlined
(Viktor Andreyevich Talday; KOMSOMOLETS TURKMENISTANA, 3 Aug 82) 63

GTN-25 Gas Pumping Units Begin Series Production
(LENINGRADSKAYA PRAVDA, 9 Jul 82) 67

Yelets Compressor Station Construction Completed Early
(V. Komov; IZVESTIYA, 6 Aug 82) 69

Gas Pipeline Construction Book Reviewed
(V. Semenov; MOSKOVSKAYA PRAVDA, 12 Aug 82) 71

Experimental Multiple-Layer Pipes Welded
(Yu. Perepletkin; IZVESTIYA, 31 Jul 82) 73

Large-Diameter Pipe Welding Unit Described
(A. Maliyenko; PRAVDA UKRAINY, 30 Jul 82) 75

Pipe Length Carriers Shipped to Tyumen
(V. Korin; VYSHKA, 5 Aug 82) 77

First Pipe Shipment Arrives in Yamal
(A. Vinogradov; KOMSOMOL'SKAYA PRAVDA, 1 Aug 82) 79

DOMESTIC USE OF ELECTRIC POWER

Yerevan PROMYSHLENNOST' ARMENII in Russian No 4, 1982 pp 22-25

[Article by Candidate of Technical Sciences L. V. Yegiazaryan and Engineer P. S. Manukyan]

[Text] The increase in the number of domestic electrical appliances has been geared toward satisfying the wants of contemporary man and providing comfortable conditions for his existence. In our country and particularly in our republic, domestic electrification is characterized by the use of electric power by the basic types of electrical appliances (refrigerators, televisions, radios, washing machines, vacuum cleaners etc.). At the same time, definite experience has been gained in using electric power to prepare food (with a two-fold reduction in the electric power usage rate). The advantages of using electric power lie in its cleanliness while it is being converted to thermal energy, its simple and safe usability and the considerably lesser amount of heat loss while using it.

At present in the republic, electric power circuits for residential buildings are being designed, taking into account the use of electrical appliances to prepare food. Contemporary conditions of improved standards of living are causing major changes in the proportion of electric loads in apartments, compared with the current calculated norms [1], which are based on research which is 10 years old. The appearance of these tendencies and the extent of change in the number of electrical appliances is interesting both from the standpoint of elaborating normative data for electric power usage as well as from the standpoint of long-range planning for increased domestic electrification.

In this regard, we have measured the expenditures of electric power and the magnitude of electric loads in modern apartments and residential buildings of the republic. The results of our measurements are cited in this article, as well as numerical data of a comparative analysis of the increased domestic use of electric power and a forecast for domestic use of electric power in the republic in 1990. This comparative analysis took into consideration actual conditions and a retrospective analysis. As is well known, the expected loads in a calculated forecast year can be determined with the aid of at least three types of mathematical and statistical models: cause and effect relationships, development tendencies and adaptive models for forecasting. Since the development of electrification in our country has a planned and regular nature, simple models of development tendencies, are effective [2]. As a means of forecasting, we used the linear form of the model of development tendencies. Checking this form in a retrospective analysis of data on domestic electrification in the USSR during the 1960-1980 period showed that the linear form is suitable for a longrange forecast.

During our investigation of domestic electrical appliances in the republic, the objects of our measurements were different points of distributing networks of 10(6) and 0.4kV, supplying residential buildings (with 40 to 2,350 apartments), which had a different level of domestic comforts. The basic characteristics are provided in Table 1.

Table 1.

Indices	Apartments with stoves		Apartments with electric stoves	
	Natural gas, Yerevan	Compressed gas, Noraduz	Yerevan	Razdan
Number of apartments investigated	278.	62	182	37
Number of inhabitants per apartment	3.7	5.24	3.6	3.9
Average living space in m^2	30	67.2	32.3	36.2
Living space per inhabitant in m^2	8.1	12.8	9	9.3
Average established power per apartment, in kW	2.43	2.48	8.08 (2.28)	7.44 (2.24)
Average established power per inhabitant, in watts	660	473	2,244 (633)	1,908 (574)
Average established power per $1m^2$ of living space, in watts	81	37	250 (71)	206 (62)

The figures in parentheses exclude the power of electric stoves.

Comparing the corresponding indices in Table 1 and [2] demonstrates that over the course of 20 years, the average established power of electrical appliances increased by 1.44 kW per apartment in buildings with natural gas stoves. In apartments with electric stoves, the increase was 2 kW per apartment. Total average established power for an apartment's electrical appliances, excluding electric stoves, varies from 2.24 to 2.40 kW, with the lower figure corresponding to apartments with electric stoves.

Table 2 shows the make-up of domestic electrical appliances and the extent to which they have saturated apartments. As we see, the total established

Table 2.

Domestic appliances	Power of appliances in watts	Prevalence of appliances			
		Apartments with stoves		Apartments with electric stoves	
		Natural gas, Yerevan	Compressed gas, Noraduz	Yerevan	Razdan
Lights	60-75	7.04	6.54	8.65	7.35
Refrigerators	130-180	0.94	1.00	1.00	0.95
Electric irons	600-1000	0.92	1.00	0.98	1.00
Televisions	150-180	0.94	0.96	0.87	0.97
Washing machines	500	0.72	0.97	0.71	0.89
Vacuum sweepers	300-500	0.38	0.17	0.36	0.32
Floor cleaners	250-350	0.40	0.55	0.40	0.38
Radios	60-100	0.56	0.31	0.53	0.10
Electric radiators and other heating appliances	800-2000	0.19	0.34	0.07	--
Electric stoves	5100-5900	--	--	1.00	1.00
Other appliances	80-150	0.38	0.10	0.10	--

power of domestic electrical appliances when they are in full use varies within broad limits--from 3.3 to 8.5 kW, excluding the power of electric stoves. The power of lighting has increased considerably--on an average from 340 W [3] to 500 W and more.

At the same time, we have not reached in our country the optimum level in using electric power for food preparation, air-conditioning, electric heaters, etc.

Modern domestic electric power consumption in the republic has been determined with the aid of daily load schedules drawn up in typical inhabitated areas and centers of electric power distributing networks. At the sites which were investigated, daily schedules were recorded for active power, current and voltage (over the course of 5-10 days in each season of the year). By analyzing these schedules, the proportionate expenditures of electric power for domestic needs were determined for two-room apartments in cities and three-room apartments in rural areas (Table 3).

Yearly expenditures of electric power were determined by taking the sum of seasonal expenditures, which in their turn were computed on the basis of daily load schedules for workdays and days off, taking into consideration that these schedules are repeated only during the given season.

Table 4 shows the measured expenditures of electric power in apartments with varying levels of domestic comforts. The data in Table 4 were obtained from the data in Table 3 by deducting the amounts of electric power expanded to illuminate stairwells and confined areas and losses in the network (5-7 percent). To show the increase in domestic use of electric power, Table 4 includes the calculated relative expenditures from 1960 to 1970 [3,4].

Table 3.

Object of Research	Bus-bars 0.4kV TP	Bus-bars 10kV RP	Bus-bars 0.4kV TP		Bus-bars 0.4kV TP
Stoves	Natural——	Gas	Electric		Compressed gas
Buildings	5-story, Yerevan	5 to 9-story, Yerevan	9-story and up, Yerevan	4-story Razdan	1 and 2-story individual dwellings, Noraduz
Annual consumption of electric power by an average apartment family in kWh	2,410	2,050	4,100	3,950	2,900
Relative computed load of an average apartment family, in kW (95 percent accuracy)	0.78	0.58	1.56	1.43	1.06
Norm for relative load, in kW	0.45	0.39	1.1	1.1	0.69
Percent of excess of measured load above the norm	73	49	42	30	54

Table 4.

	Electric power expenditure in kWh per year					
Consumer	Per apartment	Per resident	Per apartment	Per resident	Per apartment	Per resident
Apartments with natural gas stoves	730 (100-2300)	182	1200	300	2290	620
Apartments with compressed gas stoves	950 (100-2900)	238	1370	340	2760	600
Apartments with electric stoves	1800 (300-3900)	450	2200	550	3900	1115
Movable electric stoves	220	56	170	42	470	--
Illumination of stairwells	60	15.3	120	--	120-200	--

Limits of electric power expenditures are given in parentheses

An analysis shows that at present, relative domestic expenditures of electric power (as well as total established power of appliances) depend to a considerable extent on the level of the populace's domestic comforts and varies from 2,290 kW hours per year (in apartments with natural gas stoves) to 3,900 kW hours per year (apartments with electric stoves). In buildings with compressed gas stoves, the yearly expenditure of electric power for an average apartment family is 2,760 kW hours. Thus, according to calculations, for an average apartment family the annual expenditures for electric power in buildings with gas stoves is 22.6 rubles more than in buildings with electric stoves. These data were obtained for lead-ins into apartments and can be used to realistically evaluate anticipated expenditures.

In buildings with electric stoves, each resident uses an average of 1,115 kW hours of electric power per year; with compressed gas stoves, the usage is 690 kWh per year. During the past 20 years, compared with the unionwide average indices of 1960, expenditures of electric power by a single resident of a gas-supplied building in Yerevan increased by 3.4 times; in a building with electric stoves the increase was 2.5 times. Juxtaposing the results of the measurements with forecast data from 1960 [3] demonstrates that in Yerevan in 1980, the expenditure of electric power in a gas-supplied two-room apartment exceeds the forecast average unionwide level by a total of 15 percent.

According to the analysis which we conducted, there was a 52 percent increase in domestic electric power use and illumination in Yerevan from 1964 through 1980. By correlating the data in Table 5, one can determine that there should be a 16 to 31 percent increase during the next 10 years in relative expenditure for lighting and domestic power use.

Table 5.

	Years					Increase 1970-1980	Increase 1964-1979	1990
	1964	1969	1975	1979	1980			
Lighting and domestic use of electric power per resident as a percentage of the 1960 level	100	134.4	155	181	204	--	81	--
As a percentage of the 1970 level	--	100	153.3	134.9	152	52	--	--
As a percentage of the 1980 level (forecast)	--	--	--	--	100	--	--	20-28

Systematizing the data for increased domestic electrical appliances and electric power use during the 1960-1980 period, and analyzing the investigation of apartments and the results of commodity measurements allows us to forecast anticipated relative expenditures of electric power for intra-apartment needs. In 1990, the yearly expenditure of electric power for one apartment family's domestic needs will increase by 15 to 25 percent, compared to 1980, and will be 4,850 kW hours for apartments with electric stoves and 2,650 kW hours for those with gas stoves. Thus, the anticipated increase in the relative expenditure of electric power for intra-apartment needs will range from 15 to 28 percent (21.5 percent will be the mean).

A comparison of actual measured loads with norms shows the increase in relative loads for apartments in the republic. According to the calculations, in 1990, when domestic life will be totally saturated with the basic electrical appliances and new appliances (air-conditioners, washing machines with hot water, freezer, dish washing machines, etc.) will be in general use, the average relative load maximum will be .93 kW in apartments with gas stoves and 1.68 in those with electric stoves.

It is obvious, from comparing the indices for electric power usage and the amount of electric appliances (Tables 1, 2, 3), that the domestic life of the rural populace today differs little from the life of urban dwellers. From that standpoint, and also supposing that all localities of the republic will be supplied with gas in 1990, the computed loads are forecast for apartments with natural gas stoves and electric stoves, taking into account that rural residences will be equipped with natural gas stoves and urban residence will be equipped with electric stoves.

Conclusions

1. During the past 20 years, the use of electric appliances by inhabitants of the ASSR increased, depending on the level of domestic life, by 1.44 to 2 kW for combined power of electric appliances, in an average apartment.

2. The values obtained for actual relative expenditures of electric power for domestic needs can be used when evaluating anticipated power expenditures by apartment families. Since it is economically advantageous (in accord with the mean indices) for apartment dwellers to install electric stoves for food-preparation purposes, electric stoves must be introduced more widely into domestic life.

3. The magnitude of the increase in electric power expenditure by a resident over the course of 20 years (compared with the average USSR-wide indicator for 1960) is 250 to 340 percent.

4. The average unionwide level of domestic expenditure of electric power, as forecast in 1960 for 1980 was less than the level actually measured in 1980 in Yerevan by 15 percent.

5. The increase in relative domestic expenditure of electric power in the republic in 1990 as compared to 1980 is expected to be an average of 21.5 percent.

6. The largest domestic load exceeds the normative level by more than 30 percent; therefore, the existing norms for relative loads must be reconsidered.

7. In 1990, the increase in relative domestic electric loads is anticipated to be 110 to 120 percent of the 1980 level.

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Abstract

This article describes the results of experimental research about domestic electric power use in the cities and villages of our republic. The increase in power consumption and in the number of domestic electrical appliances during the past 20 years is evaluated (compared with average unionwide indices). Domestic computed electric loads and relative expenditures of electric power are forecast for the ASSR in 1990.

9887
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LENINGRAD MINING INSTITUTE STUDIES THERMAL HEAT PROCESSES

Moscow PRAVDA in Russian 30 Jun 82 p 6

[Article by V. Molchanov and V. Senin, special correspondents of PRAVDA: "The Depths Will Provide Heat"]

[Text] A Report from the Year 1990

> The development of scientific bases for projecting and exploiting circulating systems that will allow the extraction of heat energy from hot mountain rocks has begun in the Leningrad Mining Institute imeni G.V. Plekhanov.

The city of Bezmyatezhnyy is drowning in gardens and parks. But this is not a resort area. From behind the leaves, buildings of plants and factories can be seen. The sky above them is clear; not a single little cloud of smoke or a trail of dust. And in addition, there are no chimneys. There is quiet and the smell of the forest is in the air. There is a sign at the edge of the town: "From the depths -- power." The artist depicted a crevice radiating beams of light....

We would look in vain for the city of Bezmyatezhnyy on the map. It lives in the science fiction story of Academician V.A. Obruchev, "The Heat Shaft," written in 1920. The hero of the story, engineer Arkadiy Yel'nikov, fulfilled his dream. The crevice reached glowing hot granite at a depth of 1,630 meters. Cold water that was inserted into the pipes came back to the surface as steam. "You will be able to service huge factories and a large city for practically nothing. The earth will heat boilers day and night," the project engineer fervently asserted.

V.A. Obruchev implemented the idea of the "underground boiler" within the walls of the Leningrad Mining Institute imeni G.V. Plekhanov. On April 30th, 1940, Pravda printed the Academician's responses to the May Day slogan: "I can visualize that in the next five to ten years the problem of utilizing heat from the depths of the earth will be resolved in practice. It will be an endless source of energy, and in the polar zone of the USSR cities, plants, and greenhouses will spring up, serviced by this energy."

The fascist invasion disrupted our peaceful plans and delayed the implementation of these creative ideas for many years. Today, V.A. Obruchev's students are working on projects on the basis of his ideas. In the Leningrad Mining Institute there is an applied scientific research laboratory for thermal physics of mining engineering. We were talking with its chief, Doctor of Technical Sciences Yuriy Dmitriyevich Dyad'kin:

"The earth's temperature increases on an average of one degree for every thirty meters. This means that at a depth of three kilometers, water could boil. But there are places where the hot rocks lie closer."

In front of us is a map of our country. Wavy lines follow the temperature of the depths. The Prikumskiy Lowlands, the North Caucasus, Stavropol'.... A two-kilometer-deep bore can reach massifs that are heated higher than 100 degrees. It will not be required to penetrate deeply underground in order to reach hot strata in the areas of Western Siberia, Central Asia, Kamchatka, Chukotka, Kaliningrad Oblast, and Lithuania.

"The energy potential of the depths," said Yu.D. Dyad'kin,"is locked in the ten-kilometer-thick upper stratum of the earth core, and consists of many tons of conventional fuel. Only one percent of such reserves would guarantee all the energy that mankind would need for many hundreds of years...."

One of the maps shows places where geo-thermal energy is already working. For example, Reykjavik, the capital of Iceland, is warmed by underground heat. In the area of the Italian city of Larderello natural steam goes to the turbines of the electric power station. In our country, on Kamchatka, the Pauzhetskiy Geo-Thermal Station provides electric power.

"However, experiments for mastering underground resources," continued the scientist, "have so far, for the most part, not gone beyond the parameters of utilizing fountains of hot water and steam. This is merely the "cream" of geo-thermal energy."

....A piece of paper. The pencil of the scientist is drawing a so-called circulating system. The arrow, representing the bore hole, goes down to the hot stratum. Another slanting bore hole meets the first one, through which cold water is pumped from above. It would be good if at the end of the bore hole nature itself would provide a reservoir with hot walls in porous and fissured rocks. It would be filled with water coming down from the surface, and would return to the people already as hot water. A continually working reactor is formed underground, supplying us with heat without any expenditure of fuel at all. Such a system with an uninterrupted circulation of water was first proposed by the experts of the Tashkent Polytechnic Institute and the Institute of Technical Thermo-Physics of the Ukrainian SSR Academy of Sciences.

And what if the bore bypasses the hot granite and other solid rocks where there is no natural reactor for storing water? The scientists of the Leningrad Mining Institute are developing another variation: A reservoir can be formed by means of a hydrodynamic explosive in impenetrable huge rock masses.

This method is used by oil and gas workers in order to raise the effectiveness of old wells. With the aid of hydro explosives, a circulating system for a geo-thermal power station is planned in Trans-Carpathia and possibly near Leningrad.

Laboratory scientists are conducting their evaluations of resources and the selection of system parameters on the basis of economic-mathematical models that have been created here. Different types of bore holes are being tested in order to select the ones that are least expensive. An evaluation of the efffectiveness of the heat extraction is being prepared in individual districts and for the entire country.

"Massifs at depths of 4 to 6 kilometers that are heated from 180 to 200 degrees," according to Yu.D. Dyad'kin, "are found in many parts of our country, and rocks that are heated from 100 to 150 degrees can be found almost everywhere at this depth...."

Today, technical drawings of circulation systems are being prepared. Places where underground thermal energy is projected to be used first are marked on the map. Symbols show the future geo-thermal power stations: Tarumovskiy in Dagestan, Kayasulinskiy near Stavropol', Zaluzhskiy in Trans-Carpathia, Avachinskiy on Kamchatka, and Aragatskiy in Armenia.

"A large part of conventional fuel," explained the laboratory chief, "is not used for electric power, but for heating cities. This is why in the long-range program in the USSR for mastering geo-thermal energy the emphasis should be on creating circulating systems for heating cities, as well as industrial and agricultural facilities.

A block of two bore holes can deliver from 20 to 50 million kilo-calories an hour to the surface. In other words, it could supply heat to houses where 10 to 15 thousand persons live, and in southern regions up to 20 thousand persons. The system, drilled through granite thicknesses near Leningrad to a depth of three kilometers, is capable of creating the necessary climate for growing vegetables on six hectares of greenhouses. The underground reactor will save at least 18 million cubic meters of gas per year.

Well drilling today is not a difficult task; we have a great deal of experience. But how can heat be transferred from the depths to the surface more economically? There are still many unanswered questions here. These problems are being worked out by a number of scientific and construction collectives in our country, together with the Leningrad scientists.

"When do you think heat from hot rocks will begin to serve the people's needs?"

"I hope that by 1990 the development of an effective technology for extracting thermal energy from the depths will be completed," answered the scientist. "And then cities that were born in the dreams of the science fiction writer V.A. Obruchev will become reality. There will come a time when Maykop and Groznyy, Razdan and Klaypeda, Chardzhou and Tobol'sk, Liyepaya and

Kerch', and L'vov and Krasnodar will all convert to a heating system that is obtained from underground energy. Instead of smoking chimneys and boilers, there will be small columns next to the bore holes and pumping stations. There will be no need to have fuel storage or trains transporting coal to boilers...."

11350
CSO: 1822/236

ELECTRIC POWER

ORGANIZATIONAL PROBLEMS DELAY CONSTRUCTION ON NERYUNGRI GRES

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 15 Aug 82 p 2

[Article by Special Correspondent Ye. Panov and L. Rybakovskiy, editor of INDUSTRIYA SEVERA: "The Summer is Short in Neryungri. Cause of GRES Construction Slowdown"]

[Text] Neryungri, Yakut ASSR--It rains a lot in Neryungri in the summer. Too much. Black clouds wheel round and round the depressions and the rain pelts down until the ground is soaked. The sun peeks out for a little while, then the storm clouds come again without warning and the rain comes down incessantly... It's a real bother to construction workers on the Neryungri GRES.

Hardly a day goes by that brand-new parts of the Leningrad turbine and Taganrog boiler intended for the first phase of the power plant aren't soaking in the street.

"You can see we've done our best to accommodate the equipment" says A. Shvartsman sardonically. He is the chief of the fuel and transportation department of the GRES that is under construction. "It has been stacked on the ground as carefully as possible."

"I don't believe equipment of this kind was ever stored in such a way" chimes in G. Druzhinin, chief of the future power plant. "What can I say? It's barbaric."

Whose fault is it? The builders', of course -- the power plant personnel have no doubts on this score. The heavy equipment should have been put into a warehouse at the beginning of the year, and now work on the project has actually stopped. But the chief of the construction administration, V. Kamenev, has a ready counterargument: the suppliers are at fault. There are no panels, beams, roofing. What has the general contractor been doing? After all isn't his business to see to uniform supply? A reaonable question. How has such a situation come about, with no place for the turbine to winter over?

It would seem logical to dispatch equipment right from the railroad cars to installation in the main building. But as things are now, you can look right through the main building. There are no wall panels. The foundation blocks have not arrived, and no one knows when they will. Is it the builders who are at fault here as well? It would seem that it is not only the builders. The main problem here is shortcomings in direction. Planning estimates are provided to the builders late, and besides are of low quality. According to the blueprints, some plates are to be supported by air. Girders and joists are not shown.

You can't get anywhere with the Novosibirsk Department of "Teploelektroproyekt" [TEP] Institute, complains G. Druzhinin. On the building alone, the designers "forgot" 120 metric tons of metal. And another 900 were "lost" on the cable boxes. Where do we place our orders now? Where do we find the extra time to make and transport them?

Let us imagine for the moment that the building is finished. Can we go ahead and install the equipment? No. The turbine has arrived incomplete. Speaking in luggage-transport terms, there are six places missing, and one of them is a part of fundamental importance. Where is the missing equipment? Is it still at Leningrad Metals Plant? Has it got stuck on the way? Does it exist at all?

It should be said that despite their difficult circumstances, the builders have not done so badly. The have marked out the ground for the GRES. The twenty-story main building has been erected, the smokestack is up to the forty-meter level, 3000-ton tanks have been provided for oil and mazut storage, a 220/110 V open-air distribution unit has been installed, the dam is nearing completion, and so is construction of water collectors, and the reservoir is starting to fill. The town of Serebryannyy Bor has sprung up for builders and power workers...

But a lot remains to be done. At least a lot is called for in the plans. For example, introduction of the first power generating unit was initially planned for 1978. Then it was moved back three years, and now the first start is planned for 1983. And can it be that none of those taking part in the construction is reponsible for these endless setbacks?

Of course, no one at any time has ever built such an enormous fossil-fuel electric plant (power of the first phase 630 megawatts, of all six generating units -- nearly 1,300) on such a remote, northern, unlivable frontier. The estimated cost of this complex engineering project is 580 million rubles. However, such scales have required a corresponding level of support, primarily organizational. In the meantime, organization has been lagging from the first day, and is still limping along. Its untimeliness can be attributed mainly both to the two previous setbacks of startup of the first generating unit, and to the current problems on the construction site, including the sad story of the turbine.

And here is what is paradoxical. Glavseverovostokenergo (an administrative board that includes the directorate) is the client. "Bratskgesstroy" (a trust that includes the construction administration of Neryungri GRES) is the general contractor. Subcontractors are "Vostokenergomontazh", "Gidroenergomontazh" and others. All these are subdivisions of the same ministry. The USSR Ministry of Power is itself the planner, the builder and the future operator of the power plant. That is, it is acting in its own behalf, and not for anyone else.

Why is it that comrades cannot agree with one another? Whey have the efforts of allies driven them apart rather than pulling them together? Why, we ask, have the directors of Novosibirsk Department of TEP so far failed to satisfy the document signed by three chiefs of main administrations and obligating the planners to submit all documentation on the first power generating unit by the first of July? Most likely because the Power Ministry has not been the real boss of the project on putting up the power plant.

The subdivisions taking part in the construction of the GRES cannot find a common language. Their experienced directors have explained: the worst kind of bureaucracy is the bureaucracy inside an agency. Intraministerial.

Let's talk to work superintendant of the Zeyskiy Millwright Section of "Gidromontazh" Trust, A. Ivanov.

"A firm ruling hand must be sensed in everything" he says. "So what is the problem? There is a boss -- the general contractor, the construction administration. But when you run up against a pressing problem, what do you hear? That you're supposed to go to somebody for this and to somebody else for that. I don't need a reference, what I need is an on-the-spot answer to my problem!"

The slogan posted on the construction site, "Let's Finish the Main Building Before 1 October 1982", applies directly to the hydraulic equipment installers headed by A. Ivanov. And even earlier, in September, the heating duct of the building must be installed and must be supplying heat.

The project is running out of time. Time lost cannot be made up. Before you can turn around, winter will be here. The summer is short in Neryungri.

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ELECTRIC POWER

SECOND STEAM-GAS UNIT NOW OPERATIONAL AT MOLDAVIAN GRES

Kishinev SOVETSKAYA MOLDAVIYA in Russian 1 Aug 82 p 3

[Article by L. Dmitriyev: "Footsteps to Eminence. Second Steam-Gas Facility Goes Into Operation at Moldavian GRES Three Months Ahead of Schedule"]

[Text] Lights on panels began to blink, the floor under our feet gave a heavy rumble, the noise of the turbine merged with applause as the first unit of the plant started producing electric current. The work shift of the Moldavian GRES started from this instant.

This was in the autumn of 1964. The job at that time was maximally clear: the builders and millwrights were to put one machine after another into operation, and the power engineers were to take over the facilities and operate them strictly according to instructions and timetables. But such is the nature of the Soviet citizen: literally from the first day of life of the new plant every engineer and worker, technician and foreman was thinking not only about how well he could cope with his own narrow duties "coming and going." From the very beginning, the operators took upon themselves the concern for raising the efficiency and improving the reliability of the machines.

The Moldavian GRES operates on fuel imported from afar, which cannot but have its effect on the cost of producing electric power. Therefore it is natural that the collective turned its immediate attention to problems of fuel economy and reduction of energy expenditures for internal needs. For example, the ball charging of mills was optimized, as well as the number of working stages of feed pumps depending on the 24-hour schedule at the plant. This brought about the most efficient expenditure of electric power and sharply reduced fuel consumption for each kilowatt-hour.

And there is certainly no need for a scrupulous listing of names and addresses of the enterprises that assisted the Moldavian power engineers in their predeadline introduction and mastery of the energy capacities of the GRES. Dzhezkazgan copper or Kuzbass steel, Baltic plastic or local concrete made with Rybnitsa cement, all the thousands of diverse structural members and components have been intertwined here in the building of the GRES. It is all intertwined and there is no use looking for figures on the amounts of metal structures or instruments supplied to the plant. Friendship is not measured in numbers.

Nonetheless, a few are indispensable. At that time in the mid sixties when the name "Moldavian GRES" showed up on the portfolio of orders at Leningrad Metal Plant, no one even thought of calculating the exact date of their future joint triumph. An order is just an order. There was nothing complicated about it. The usual "200's" that had already become base units. The usual parameters. Everything as usual. The first, second, sixth,... the tenth turbine.

And then it turned out that the eleventh turbine for the GRES would be a little unusual. Or to be more exact, even experimental. It was to operate in a unified mode with a steam-gas facility, a turbine which the Leningrad plant was also to make. There was a brief meeting in the bay of the 21-st steam-turbine shop and it was decided to fill the order of the Moldavian power engineers ahead of schedule.

The same obligations were taken on by the Khar'kov and Taganrog collectives, which appreciably shortened deadlines in delivering the generator and steam boiler.

All this enabled the builders and millwrights of the SMU [expansion not given] at the Moldavian GRES to put the first PGU-250 (the abbreviated name of the new steam-gas facility) on line last autumn. The technological parameters of the steam-gas facility enabled production of an additional 40,000 kilowatts of electric power. We mention in passing that this was the initial total capacity of the Dubossary GES. Moreover, and this is especially important, the new unit quickly covers daily "peak" loads: the facility can be brought up to operating conditions in less than ten minutes.

Following the first steam-gas turbine, work started on building the second, which was to operate in conjunction with the twelfth power unit. According to plan, it was to be put on line in September of this year, but precise engineering calculations, industrialization of work, and able use of their own rich experience enabled the collective to put this important facility into operation three months ahead of schedule.

"And all the same" says GRES Director G. P. Kior, "our own efforts would not have sufficed had it not been for our numerous allies who came once again to our aid. We received equipment ahead of schedule from Leningrad and Khar'kov. Zaporozh'ye, Belgorod and Taganrog responded to the pleas of the Moldavian power engineers. The workers' relay race provided a mighty impetus on the worksite."

Many of those who constructed this vital facility are Dnestrovsk veterans. They started here when the first peg was driven, dug the foundation pits for the columns of the main building, put in the first roads, poured the concrete for the foundations of all twelve power units. One such is masonry team leader V. Rashkovan. His team is the crème de la crème. He began work here as a young team leader twenty years ago. He is a concrete finisher and carpenter, mason and asphalt worker.

Rashkovan's team was a driving force in the construction of both steam-gas turbines. No one can recall a case where this collective did not handle its assignment, or did not finish with "highest marks." Time cannot diminish the fame among workers on the construction site of teams led by A. Kozlovskiy, A. Lachkov, Ye. Azarenko, N. Serebryakov and I. Cherednyakov. They have shown themselves to be talented organizers and able leaders. A creative approach to work and the striving to do it quickly and well are the earmarks of veteran team leaders.

The labor of builders, millwrights and operators and their numerous allies has been crowned with success. Georgiy Pavlovich Kior spoke about the outlook for improving the plant, about the tremendous benefit to the national economy that will be brought by the new facilities, about plans for a sharp reduction in fuel consumption.

A few days ago the science and engineering council of the USSR Power Ministry held a meeting at the GRES. Taking part in the session were representatives of research and design institutes, "Orgenergostroy" and all manufacturing plants that supplied equipment for the steam-gas units.

The participants in the meeting unanimously noted that the collective of the Moldavian GRES has done a great job in putting the PGU-250 into operation. Step by step, every worker at the plant is rising in development. In evaluating their excellent work, they find fault (of course in the positive sense of the term), singling out weak aspects of individual units, analyzing the components of efficiency of aggregates together with plant specialists and scientists, thinking about what and how to improve.

The introduction of two steam-gas turbines at the Moldavian GRES is already giving an appreciable return. For example the specific heat consumption by each unit has decreased by six percent. The result is a reduction by 25,000 metric tons in annual fuel consumption per turbine.

The configuration of the PGU-250 as compared with the conventional design has considerably reduced both the construction volume and the staging area. The result has been a reduction in the cost of construction and millwright work by nearly 500,000 rubles, a savings of 680 metric tons of steel and 1100 cubic meters of reinforced concrete, and decreased labor inputs by 16,000 man-days.

And perhaps the main thing: the Moldavian experiment has demonstrated a base for further development of economic and highly maneuverable energy-producing units with high power.

...It was nighttime as we drove away from the Moldavian GRES. It was alive with lights. It had been a pleasure to visit with people whose aspirations, efforts and drive are not limited to the scope of the current plan and today's concerns, whose prosaic duties have become equivalent to a high professional obligation.

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ELECTRIC POWER

LESSONS OF EKIBASTUZ GRES-1 CAN HELP IN BUILDING GRES-2

Moscow EKONOMICHESKAYA GAZETA in Russian No 35, Aug 82 p 13

[Article by Team Leader A. Stepanov, "Sredazenergomontazh" Millwright Administration: "What's Troubling Millwrights. Strong Rear Lines for Ekibastuz GRES Construction"]

[Text] Experience accumulated in construction of the Ekibastuz Fuel-Energy Complex has been instructive, and doubtless will be useful in other areas of the nation. On this project solutions have been found for a number of complicated engineering problems, practice in organizing construction and millwright work has been enriched, a considerable contribution has been made to coordinating the activity of various ministries and agencies on the scale of the entire complex.

At the same time, we must not overlook the inadequacies that slow down construction of electric power plants. For example, all power units of Ekibastuz GRES-1 are being put into operation with a delay past the set deadlines. There have been considerable nonproductive expenditures and losses in the course of construction. All this is cause for concern. This is why I have decided to make some of my own comments and considerations.

As installers of heat-producing equipment, we millwrights are especially aware of dereliction in the organization of delivery of equipment to the construction site. At one time it had been planned to set up a large comprehensive industrial base at GRES-1, where incoming boiler units, turbines, pipes, electrical and other equipment were to be unloaded. But construction of this base was not started on time. Suffice it to say that the work on the construction yard was started at the same time as on the main power facilities, rather than earlier as had been stipulated. And what do you think happened when the equipment started flooding in from the suppliers?

As things turned out, there wasn't any place to put it. Equipment began to be unloaded on the yards at the Yermakovskiy GRES and Ekibastuz TETs, on the base of the production-process support administration of "Ekibastuzenergostroy" Trust, and sometimes just right out there on the prairie. In the confusion the equipment wasn't even inventoried, just stored where it lay. Thousands of hours have been wasted, and indeed are now being wasted by workers, engineers and technicians alike in looking for required items randomly dumped in different locations. Some of the fittings and pipes have suffered damage as a result of improper storage.

Such has been the situation with regard to delivery of equipment for GRES-1. And I am concerned lest we face a similar situation with delivery of boiler units, turbines and other equipment for GRES-2.

The first consignments of process equipment will shortly begin arriving. And once more due to the lack of completed yards at GRES-1 there will be nowhere to put these consignments. And this means that there may be a repeat of the same confusion that reigned in construction of the first power plant.

There are serious doubts about the planned method for delivery of large and heavy consolidated units by truck -- trailers and tractors from the regional motor pool. Still fresh in my memory are the unsuccessful attempts to use them in construction of GRES-1. Transport units designed by the Odessa Affiliate of "Orgenergostroy" Institute were made for hauling 100-ton boiler units, but they were not suitable. Now two trailers that cost 120,000 rubles apiece are standing idle.

The access road over which equipment is to be hauled to GRES-2 has been designed in such a way that there is a 26 cm space from the wheel to the shoulder. What does such a small distance mean for huge trucks that are difficult to steer? The slightest deviation from the center of the route, which is not at all impossible under icy conditions, and the platform may overturn with all the resultant consequences.

The necessity arises of re-examining the methods and means of delivering equipment to GRES-2. I have already said that the unloading area of a regional comprehensive base was to have been built at GRES-1. But since this project was never completed, the idea arises of building unloading yards at GRES-2. What do we achieve in such an event? First of all, we avoid overloading of equipment on the yards at GRES-1. Secondly, the units would be transported by rail directly to the power plant under construction from the manufacturing plants.

Placement of consolidated assembly yards at GRES-2 is advantageous in all respects. Estimates by specialists with whom I have consulted show that organization of a trans-shipping base at GRES-1 will involve additional transport expenditures to the tune of about two million rubles.

We are particularly concerned about the assembly and consolidation of large modules. A special millwright operations (SMO) building has been designated for these jobs. It has been planned by the Leningrad Affiliate of "Energomontazhproyekt" Institute (chief engineer of the institute is A. Shchagin and chief project engineer is L. Bulanov; department head is Yu. Reshetov). According to calculations of the institute, the removal of metal structures will be 4.7 metric tons from a square meter of production area per year. But this figure of the institute is overstated. We are now removing 0.15-0.17 metric ton of metal structures per year from a square meter, which is 30 times lower. The institute has figured that it takes 2.1 hours to fit one metric ton of high-pressure pipelines; in reality it now takes 6 man-days. We do have unused reserves, we know that. But they are not nearly as great as assumed in the plan.

Manufacturing plants consign heat-producing equipment to Ekibastuz without assembly precheck. We have to do this work on the spot, eliminating the deviations from blueprints. But somehow, the specialists at "Energomontazhproyekt" have failed to account for such additional work.

In criticizing the plan for the SMO building, we should not fail to mention the following items. Assembly of units with height of 12,960 mm is stipulated, but because of design miscalculations, the building will accommodate pieces no larger than 10,400 mm.

On paper, we have a building for assembling and installing 45,000 metric tons of equipment per year. However, we are handling only 5,500 metric tons. We need a realistic figure, not some "blue-sky" idea.

There is every reason to believe that the SMO building will not be able to meet the requirements of heating equipment installers' organizations during construction of GRES-2, and for that matter GRES-3. And we must take immediate steps to unplug the bottleneck.

There is another troublesome problem. Design institutes have suggested production-line installation with self-propelled hoisting rigs. These can deliver modules from all sides of the erection site at the same time. This would be wonderful, but we have no such rigs at our disposal. When we talk about this to the designers, unfortunately they do not want to hear our arguments. We are all for putting new progressive ideas into practice, but are categorically opposed to using half-baked assembly technology that does not jibe with specific conditions.

We are on the brink of starting installation of heat-producing equipment at GRES-2. We must get the utmost out of the lessons of doing this work on GRES-1 so that we do not repeat our previous errors and blunders.

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ELECTRIC POWER

SOLAR ENERGY INSTITUTE IN ASHKHABAD

Moscow SOVETSKAYA KUL'TURA in Russian 8 Jun 82 p 8

[Article by V. Svirin, special correspondent: "The Desert Promises Comfort." Passages enclosed in slantlines printed in boldface.]

> [Text] Using the sun's energy is the task of a unique scientific production society established in Turkmeniya.

"What comfort? What are you talking about? Have you ever really seen a desert even once? A real one? The kind where the sand is so hot that if you extend your hand toward it, your palm will be burned as if by a flame? Where the sand dunes are so curving that you can walk around for a whole day and at the end you will realize that you have been stamping around in one place. This has happened with inexperienced people. As a matter of fact, some do not even last a day; after all, there is not a drop of water around, and with 45 degree heat, nearly a liter of moisture evaporates every hour from the skin's surface...."

The above monologue could be spoken by any one of us who has read and heard so much about the harshness and insidiousness of deserts. And all this is true. But wait a minute now: People live and work in this destructive heat. They drill wells for oil and gas and shepherd millions of sheep. And the person I was speaking with, Redzhep Bayramov, General Director of the "Solntse" Scientific Production Society and Academician of the Turkmen Academy of Sciences, was born in the desert. Son of a shepherd, he tended flocks of sheep himself to the age of fourteen, from three to nine at night, when a person can breathe with relative ease and the oppressive heat does not exhaust the animals.

"And in 1943," says R. Bayramov, "we received news that my father had been killed in a battle in Staraya Russa, and I was sent to a boarding school. Then I completed my studies in physics at the University, studied as a graduate student, and defended my theses for the candidacy and doctorate...."

He knows the desert and contends that it is a land of bounty! And if it were to be populated, used, and built up, it is difficult even to speculate how much it could provide for the state.

The "Solntse" Society is working specifically on creating green oases in the searing sands. "In my youth," reminisces Bayramov, "my mother would sometimes say that our neighbors -- but their tent was more than ten kilometers away -- have moved to town for good. Why, I wondered. Do they live better in town? But no, there is another reason: you come back from work, take a shower, go to a movie, read a book, and suddenly you are not tired at all. It would be really good for the nomadic shepherd, the tractor driver, and the cotton grower to come home, wash off the dust eaten into the skin, and sleep at least two hours, but in a normal temperature. Two hours and your strength is regained.... This is why we are striving to secure not only tolerable, but to a certain degree even comfortable conditions for those working in the desert. We hope to do this with the help of the sun. We are exploiting the sun. We invent, construct, and calculate all possible solar devices,test them, and put them into operation."

In order to understand how the sun is being used here, we would like to cite an example that is widely known among experts: If one could collect without any loss all the energy of the sun's rays that fall on the earth's surface within a period of two weeks, it would equal all the reserves of the traditional forms of fuel. This example can be made more specific by another one: If one takes the roof of an ordinary bus that is driven, let us say, in a Central Asian desert, and replaces the roof with a solar device that ideally catches and converts solar rays into energy, it would save ten liters of gasoline every day.

But thus far this is not possible. What is possible then?

An experimental three-story building with a solar technical microclimate system has been built on the grounds of the Institute for Solar Energy, which is a part of the Scientific Production Society. The experiment was a success, and now there are four buildings with 128 apartments each in Ashkhabad that have been equipped with a similar air-conditioning system. The same principle will also be applied in the solar town located in the settlement of Cherkezli in the Kara-Kum, the construction of which has just started. Here, the sun will be "ordered" to cool the little houses of the animal breeders.

Incredible? Our readers, however, probably have not forgotten the small household "Sever" air-conditioners that were manufacured not too long ago. Ammonia was circulated in these air-conditoners, heated by electricity or a gas burner, it evaporated, and cooled the room.

Replace the heat source by the burning sun, and there is nothing fantastic about it. Of course, scientists of the institute declined to use ammonia, selecting solutions of lithium bromide or calcium chloride, and the cooling radiators were built into the ceiling and floors.

/Such an innovation is priceless in a hot climate, and not only because of its beneficial effect on man's condition and well-being. There is another important factor: It is now possible to preserve rapidly perishable products for a protracted period of time in the summer desert./

The sun is "predestined" both to heat the small solar town in the wintertime and to assure its inhabitants of a hot water supply. In R. Bayramov's explanations, using as an example the institute administration building where we were talking, this process is not complex at all. It begins between a heat-absorbing surface and a heat exchange unit, a flat wooden or metallic box filled with black material that actively absorbs the sun's rays. The box contains pipes filled with water whose temperature reaches a total of 65 degrees. And if one uses a box the size of, let us say, a dining room table, it can save 200 kilograms of coal per year.

/Nevertheless, this only seems simple. Experiments on several types of solar water heaters were conducted by many academic and government institutes of our country for two years on the proving grounds of this institute. The term "several" speaks for itself. Hopeful results were obtained, as well as one major result: The utilization of apparatuses for supplying hot water and for cooling buildings will save over 600,000 tons of conventional fuel annually, that is, forty-five per cent of the general fuel needs that the republic uses for these purposes. But perhaps the main point lies elsewhere: Over one-half of the three million population of Turkmenistan is dispersed throughout the vast desert expanses having a density of five persons per square kilometer, and it is cheaper to deliver self-contained apparatuses to them than coal, wood, or kerosene./

But there is a stumbling block in this: water. A drop of water in the desert is worth its weight in gold. People need it, but even more so, sheep require it. And there are one thousand sheep in every --every!-- flock. Water is transported for them from twenty to thirty kilometers away.

And what if water pipelines are laid? It is expensive: The cost of a cubic meter of water is nearly three rubles. What if irrigation ditches are extended? This is not very effective, because evaporation of water in the desert is so intensive that a pail of water poured in the morning and left in the baking sun will be empty by evening.

"Then," continued the general director of the society, "we decided to obtain water from the underground salt water reserves. For all practical purposes they are everywhere. We dug the first well in the atypical terrain of Obez-Shikh for the 'Bakharden'Sovhoz and erected a solar water distillery next to it. It justified itself..."

/To those readers who have been in the city of Shevchenko and know that the city is fully supplied with water, desalinated in industrial quantities by a powerful apparatus, which by all rights could be called a plant, this information given by R. Bayramov will not appear to be something unusual. But this is the whole essence: From available material, window glass, concrete, and metal, unheard of apparatuses are put together, which from afar look like hotbeds with only one exception, which is that their glassed-in frames have an exactly measured angle of declination. Water vapors from the salt solution heated by the sun condense on the inside surface of the frames and drip into small containers./

"Well, what is the productive capacity of the water distillery?" I asked.

"It depends on the area. One cubic meter will give one cubic meter of desalinated water per year. This is entirely sufficient."

"And how reliable is it?"

"In Turkmenia, with the aid of solar rays, it is possible to obtain desalinated water 280 days a year. The rest of the time, a reverse procedure is used: freezing."

At first glance this is not very clever technology. However, preliminary calculations are startling: If in Southern Kazakhstan and Central Asia around 9,000 such apparatuses were to be built, they would "bring" nine million cubic meters of water per year and would allow an increase in livestock of nine million sheep. And this addition would mean 25.5 thousand tons of wool, 86.4 thousand tons of mutton, and nearly three million karakul skins. And furthermore, a quantity of water distillers such as this would save the state 125,000 cubic meters of gasoline, which would be needed for automobile transport in order to deliver water to the pastures.

In the small solar town mentioned above, scientists of the Scientific Production Society "Solntse" will also use solar energy in greenhouses with a sealed water circulating system. Not going into technical details, I would just like to say that in similar experimental greenhouses dill and parsley, watercress and sorrel, cabbage, cucumbers, and tomatoes have been grown successfully. They also had high yields of lemons, up to three hundred fruits per bush, without using auxiliary heat. We compared the cost of production in the solar and in an ordinary lemon hothouse, and it turned out that it was only half as much in the solar.

/The small town in the atypical terrain of Cherkezli was conceived by planners as a place where various types of solar energy converters, already approved in laboratories, proving grounds, and households of the republic, are concentated in one location. With regard to a standard of conveniences, it will not take second place to a modern city apartment for a family of four; and with regard to the plot of land, it is really like a farm where one may, if he wishes, have both a swimming pool and a man-made reservoir with fish. Of course, in order to feed the fish one would have to build a structure for an accelerated reproduction of [chlorella], the tiny algae which are rich in albumen. Such a [chlorella] factory is now functioning at the society institute, periodically supplying the neighboring economy with an excellent supplement to the animal food rations./

"Incidentally, what about dinner for the shepherds," I asked Bayramov. "And what about the popular hot green tea, which quenches thirst in the desert better than anything else? Is it prepared over a campfire? On a kerosene burner?"

"Why? There is a small solar kitchen made of several spherical mirrors. The position of the mirrors is regulated by the sun, the reflected rays are focused on the pot or, if you wish, on a frying pan or a teapot. Six liters of water can be boiled in one hour."

"Well, and how about electricity? A television set cannot be turned on without it...."

/And here we encountered the problem of a solar electro-station. There are several variants. For example, a well-known one was invented in Uzbekistan. It feeds a light grid comprised of five to ten lamps. There is a French one that has a power of sixty-five kilowatts. There is one that is a steam turbine located on the proving grounds of the scientific production society headed by R. Bayramov. However, they are all low-powered and cumbersome. The problem could be solved by applying photoelectric generators as is done on spacecraft. There, the photo elements themselves convert light falling on them into electric energy./

"Thus far they are expensive." noted Bayramov. "And this is why they are searching for economically acceptable methods for converting solar energy into electric energy. I have no doubt that we shall succeed!"

"In other words, everything that you have listed is probably not inexpensive either?"

"It depends on how you look at it.... Economic and social concepts are often closely interwoven. The famous English scientist Brinkwort, as I remember, expressed the thought that a farmer will not acquire solar converters; he cannot afford them. Our solar complex is actually given by the state to the shepherd brigade, because in our case the shepherd is not an abstract person or an abstract figure, but a man working under difficult conditions for the good of society."

My interviewee is convinced that hundreds of such complexes will appear in the Kara-Kum Desert in the not too distant future. Even during the 11th Five-Year-Plan shepherd brigades from cultivated zones and large populated areas will arrive in these complexes on their way to stand their watch. The preliminary average cost of a solar farm in Turkmenia will not exceed 100,000 rubles, and the expenses will be amortized in 3.5 to 9 years, depending on its remoteness. Solar rays will also perform many tasks in cultivated zones. With the help of small apparatuses, power can be guaranteed for such productive activities as spinning, woodmilling, canning, and light industry. Drying vegetables and fruits, silkworm cacoons, and irradiating cotton seeds to have a better harvest, and the processing of daily waste is also the sun's professional duty. Experiments are being conducted that will have a great significance for Central Asia, Kazakhstan, Transcaucasus and North Caucasus, southern Ukraine and the Lower Volga region, where the climate is favorable for using solar energy. Scientists have calculated the following: The roof of a house fulfilling its role as a collector of solar radiation will activate a weaving loom or a turning lathe; the roof of a shed will activate a pump for irrigating tens of hectares of land. A device the size of a classroom blackboard will "activate" school radios and television receivers.

/These are not outrageous fantasies but vital necessities dictated by many circumstances. Among them are the rapid development of the chemical industry which produces newer and newer valuable products out of traditional forms of fuel, the reserves of which, incidentally, are not limitless. Among other circumstances is also the unprofitability of future transport of fuel. Finally, solar energy precludes the pollution of the environment./

Of course, there are many more objective reasons which motivate research in the area of solar technology. And the scope of its application is also immeasurably broader. In our conversation with Academician R. Bayramov, however, we touched only on one topic: What is already being done today to have everyday life and labor "be felt" in the desert.

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SOLAR CONVERSION STATION IN KARA-KUM DESERT

Moscow TRUD in Russian 9 May 82 p 4

[Article by V. Knyazev and A. Tychinskaya: "The Sun Gives Energy"]

> [Text] The construction of stations for the direct conversion of solar energy into electrical energy has begun in the grazing pastures of the "40 Years of the Turkmen SSR" kolkhoz in the Kara-Kum Desert.

In these spring days Kara-Kum greeted us with soft green colors and waving fields of scarlet poppies. Numerous flocks of sheep have gone out to the grazing pastures. Here, several hundred kilometers from the central farmstead of the kolkhoz, the shepherds keep their watch. Their labor is not easy, and this is why scientists have been thinking for a long time about how livestock breeders could be helped in watering multi-thousand numbered flocks in the desert. This is the main problem in the Kara-Kum.

In recent times electric motors have been used to lift water out of deep wells. But it is really impossible to extend electric power lines [LEP] into every district of the desert. Coming to the rescue was - the sun. Scientists of the Turkmen main laboratory of the All-Union Scientific Research Institute for Power Sources have built miniature power stations which convert the sun's heat energy into electricity.

Literally in front of your eyes a device is assembled that resembles a radar antenna. This is the station itself. It can be easily transported from one district of the desert to another, following a flock, and assembled within one hour. For all practical purposes, the station can operate the year round. After all, in Turkmenia there are nearly 300 sunny days out of every 365 days. Well, what if cloudy weather occurs despite all this? Scientists have also anticipated this. The station built by them is insured by the blades of a windmill that come alive with even a slight puff of wind.

A real yurt is also a part of the station complex. Its cupola girds several solar batteries. They also convert solar energy into electricity, but autonomously from the station. There is enough electricity for uninterrupted usage of any common apparatus and, if necessary, even for churning butter or shearing sheep.

Let us, however, return from the desert to the laboratory. Its chief, Candidate of Physical-Mathematical Sciences B. Bazarov, is speaking:

"Our main task is to implement a close tie between science and production. We construct everything ourselves and create southern versions of apparatuses invented in other subdivisions of our institute and the laboratories of the Kvant' Scientific Production Society. We have received orders for producing tens of integrators for stray currents from the 'Turkmengazprom' All-Union Society and from 'Turkmenglavenergo.' In a matter of seconds the new apparatus can determine the rate and extent of corrosion in metallic LEP structures and in gas pipelines. It is also irreplaceable in laying these lines, because it can tell the builders at which points the metallic structures will be less subject to corrosion. We are also developing a solar electro-station for feeding radio relay lines of communication along the Central Asia-to-Center gas pipeline."

Together with colleagues of other organizations of the Turkmen SSR Academy of Sciences, the laboratory collective is creating essentially new devices for detecting and forecasting earthquakes in seismologically active zones. Based on new principles of indicating physical fields and on the latest discoveries in the field of molecular electronics, these devices will be highly sensitive.

Our excursion through the laboratory ended and we walked out into the sun-drenched street. A minibus [rafik] drove up to the entrance.

"It is not quite the usual thing," noted B. Bazarov, asking us to get into the vehicle. The microbus began moving smoothly and quickly gathered speed. In all this, there could not be heard any engine noise at all. It turned out that the vehicle works on solar batteries installed in its top. At night, the engine gets its power from a special "filling station" which collects energy during the day.

11350
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SOLAR CONVERSION OPERATIONS IN TUSSR DESERT

Moscow IZVESTIYA in Russian 25 Jun 82 p 2

[Article by A. Blokhnin and V. Gavrichkin, special correspondents of IZVESTIYA : "Radiant Energy"

> [Text] The first two industrial solar complexes are being built by workers of the "Solntse" Scientific Production Society [NPO] of the Turkmen Academy of Sciences and the Turkmen branch of the All-Union Scientific Research Institute for Power Sources (NPO "Kvant"). The first solar town for shepherds began to be built on the atypical terrain of Cherkezli in the middle of the Kara-Kum Desert and the second, in the grazing pastures of the "40 Years of the TuSSR" Kolkhoz area.

The desert sun quickly stifles the short burst of springtime green with its powerful heat. Only two weeks ago, poppies glowed even among the sand dunes, but now the colors have become dull. And it seems that the thick , intense heat does not bother only the lively small lizards frolicking in the yellow drifts.

But suddenly a bright object is interwoven into this barren, monotonous landscape: a narrow strip on the horizon sparkles with a crystal-like glitter in the sun's rays. Is it water?

Soon, however, the "mirage" vanishes. What we first thought was water, actually has the most direct relationship to water, but so far does not contain even a drop of moisture. These are the glassed-in "honeycombs" of the water distilling apparatus - the main structure of the sheep-raising solar complex in Cherkezli. Life will give it that same furious sun that burned out everything for hundreds of kilometers around.

In the wintertime it will warm the small houses of the animal breeders and during the oppressive summer heat it will cool them. A motor will lift salt water out of a well and all everyday appliances will work on electric power obtained with the help of solar batteries. The sun will provide "fuel" for the kitchen, heat water in the shower assembly, and grow vegetables in a hothouse that has a sealed water-circulating system.

The Director of the "Solntse" [Sun] Society and Corresponding Member of the TuSSR Academy of Sciences Professor R. Bayramov, believes that the future conquering of deserts lies in such autonomous solar complexes. They will guarantee that animal breeders, who live far away from populated areas for long periods of time, will be provided with energy, water, and vegetables.

The "Solntse" NPO and the Turkmen section of the All-Union Scientific Research Institute for Power Sources can be called "sunshine neighbors." They have spread their experimental proving grounds in the small town of Bikrova, near Ashkhabad. Here they have, among other things, test stands for the direct conversion of light energy into electricity, filled with cassettes having semi-conductor elements that give off a blue gleam; and fantastically formed transparent photoreactors for growing [chlorella]; and solar high-temperature ovens that can smelt metal samples having the high degree of purity that is unattainable to other forms of metallurgy; and a whole collection of various kinds of water heaters.

The 25 laboratories of the "Solntse" NPO and the 8 Turkmen "Kvant" laboratories are working in Ashkhabad on the practical implementation of a program to master renewable sources of energy (in this case - solar), a program that was developed by the USSR State Committee for Science and Technology.

"Solar technology," says B. Bazarov, chief of the Turkmen section of the All-Union Scientific Research Institute for Power Sources, "is no longer at the stage of consisting of unique and exotic experiments. Today, a new branch of industry is actually being born that will make it possible for us to begin applying solarization to some manufacturing, which will result in a noticeable replacement of traditional types of fuel by solar energy.

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WIND POWER EXPLOITED IN AZERBAYDZHAN

Baku VYSHKA in Russian 16 May 82 p 4

[Article : "Wind, Powerful Wind" (AzINFORM)]

[Text] In all truth, research results over the last few years in the area of wind power energy justify these Pushkin-like lines.

Scientists of the Azerbaydzhan Scientific Research Institute for Energy imeni I.G. Yes'man, having completed an "Index of Winds" in the republic, have determined which places are suitable for the construction of wind power stations [VES]. These powerful stations, the first in our country, will be producing industrial electric energy.

On the basis of a "wind cadaster," a special table for measuring air masses, certain points are established where the mean annual wind rate is equal to no less than nine meters per second. The windiest areas turned out to be the areas of the Apsheronskiy Peninsula in Baku, Sumgait, and the Neftyanyye Kamni. The "wooden windmills" which will grow here are real giants in comparison to their ancient wooden predecessors. Concrete supports will carry huge, up to 80 meters long, arms of the windmill at a height of 50 meters. While turning, they will activate a generator. This type of construction will permit a more effective use of wind energy for feeding industrial and household electric transmission lines.

The proposed output of these VES is two megawatts, which is hundreds of times greater than the output of existing apparatuses.

And although similar stations are only being planned for construction, scientists today are already looking into the future. Scientists at the "Soyuzgidroproyekt" Institute in Moscow have developed a project for a gigantic structure over half a kilometer(!) in height, that is, one and a half times higher than the famous Eiffel Tower.

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ELECTRIC POWER

BRIEFS

PEAT FOUND IN LATVIA--Riga--It took only a few weeks to find peat deposits in an area of 6,000 hectares in Latvia. It was not necessary to probe the soil manually or to drill bores. The exploring party, which would have had to spend around two years on such a project, was replaced by a cross-country vehicle. It was equipped with a special radar, which allowed it to find and classify peat deposits. This apparatus was invented by scientists of the Riga Institute of Civil Aviation Engineers. [Text] [Baku VYSHKA in Russian 11 May 82 p 1] 11350

FIRST SYNTHETIC FUEL FACILITY--Tula--The first synthetic fuel facility in the country, which is being constructed near the "Bel'kovskiy" mineshaft, will begin producing gasoline out of coal. It is designed to process seven tons of coal in a 24-hour period. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 29 Apr 82 p 1] 11350

SOLAR ENERGY FACILITY--Tynda(Amur Oblast)7. TASS--The sun heated the workers' dormitory of the "Bamtranstekhmontazh" at the edge of Tynda for the entire winter. Special apparatuses accumulated solar energy and transferred it to a heat supply system, helping it maintain necessary temperatures in buildings even in severe cold. The experiment concluded with the end of the heating season, but according to the experimentors, scientists of the Special Construction Technology Bureau of Glavbamstroy, it confirmed the possibility of using solar energy with the objective of saving traditional sources of fuel. In comparison with the control building, electricity usage here was nearly one-third less. Similar experiments have been conducted in our country and abroad, but this is the first one above the 50th latitude North. [Text] [Moscow PRAVDA in Russian 8 Jun 82 p 6] 11350

FIRST SYNTHETIC FUEL FACILITY--TASS--The first synthetic fuel facility in the country, which is being constructed near the "Bel'kovskiy" mineshaft (Tula Oblast), will begin producing gasoline out of coal. It is designed to process seven tons of coal in a 24-hour period. Scientists will also test the possibility of obtaining other forms of valuable fuel from the brown coal of the Moscow and Kansko-Achinsk solid fuel deposits. [Text] [Moscow PRAVDA in Russian 29 Apr 82 p 2] 11350

ARMENIAN SOLAR ENERGY FACILITY--TASS--In Armenia the length of time the sun shines is 3,000 hours. Solar radiation reaches 1.6 calories per minute for one square centimeter on the eastern shores of Lake Sevan. Scientists of the republic solar laboratory have invented a number of original devices for using solar energy. /The photograph shows:/ A solar device for accelerated aging of materials is being used successfully by the Yerevan Section of the All-Union Scientific Research Institute for the Cable Industry. It cuts down the time tenfold for experiments with various industrial rubber, paint varnish, and other products. The facility was awarded the Great Gold Medal of the Leipzig Fair. Photograph by G. Bagdasaryan. [Text] [No source and date given] 11350

CSO: 1822/236

KEMEROVO PEOPLE'S CONTROL GROUP FINDS MUCH ABANDONED METAL IN COAL MINES

Moscow PRAVDA in Russian 10 Jun 82 p 3

[Article by S. Vinogradov, member of the city's people's control committee and correspondent of the newspaper KUZBASS, and I. Kazantsev, inspector of the oblast's people's control committee (Kemerovo): "Treasure Lies at Mine Faces"]

> [Text] The Kuzbass [Kuznetsk Coal Basin] gives the country almost 150 million tons of fuel each year. At the same time, the basin's coal miners consume each year almost half a million tons of rolled steel alone. The modern coal mine, in the direct sense of the word, clings to metal: steel supports, conveyor lines....Let's not go over the whole thing. How is all this used?

The surprise patrol brigades that visited Severokuzbassugol [Northern Kuzbass Coal Production Association] enterprises observed true iron treasure--more than 2,000 units of equipment that cost almost a million rubles had been abandoned underground.

During a check at the Tayezhnaya, Sibirskaya, Biryulinskaya and Fizkulturnik Underground Mines, hundreds of sections of mechanized supports, 48 winches, 108 electric motors, and hundreds of meters of rail and cable were recovered from the heaps. A large portion of this equipment was sent for repeat use and repair.

Such cases of wastefulness were discovered also at other underground mines. At Prokopyevskugol [Prokopyev Coal Production Association] enterprises, more than 3,000 units of equipment were recovered with the help of the patrols. Since the activists' intervention, 141 electric motors, 6 conveyors and 45 tons of metal supports are now being readied for repeat service.

Why did the miners throw away equipment with such a lack of concern? There are many factors here. Let's begin with the plan indicators. Fairly rigid norms have been established for the consumption of wood and electricity, but there is no such strict requirement in the case of metal. Components and parts that have failed and have been replaced by new ones and machines that have served out their time are left underground.

The fact that the quality of mine-equipment repair suffers serious deficiencies in the basin also contributes to this wastefulness. V. Bazhanov, director of one of the repair enterprises--Leninsk-Kuznetsky's Krasnyy Oktyabr--states that, for example, the winding of the stator of a new electric motor is made with high-quality wire and insulating materials. But second-grade materials are considered permissible when the motor is overhauled. The repeat use of bearings is permitted during the repair of important cutter-loader components, although the specifications categorically prohibit this....As a result, the miners, distrusting the longevity of the repaired equipment, prefer to obtain new machines, and the old ones are relegated to the dumps.

It must be said that the basin's coal workers have many times asked the ministry to create in the Kuzbass a modern base for repairing underground-mine equipment, but they have never received businesslike support--repair is conducted, as before, in repair shops that tend to be of the handicraft type.

But yet the miners themselves are the guilty ones, first and foremost. The results of the surprise visit testified graphically to many omissions in the forming of fixed production capital and in the use of mechanisms. A substantial portion of the equipment is only formally counted in the accounts of the supervisors of sections and services. For example, at the Anzherskaya Underground Mine 156 units of equipment that were lost long ago are listed, several of the accountable persons having been fired from the enterprise, the material valuables being attributed to them.

Formalism in reporting leads also to a freezing of material valuables and the creation of reserves of unused equipment. Here is what the brigade of Rudnichnyy Rayon People's Control Committee of Kemerovo observed at the Yagunovskaya Underground Mine. One of three breakage-front longwall mining machines and two of six tunneling cutter-loaders proved to be in operation, three loading machines and five drilling machines were not being fully used, and 137,000 rubles' worth of outmoded equipment were found in storage. In brief, because of excessive amortization deductions for surplus and unused machines alone, the prime production cost per ton of coal rose by more than 10 kopecks at the Yagunovskaya mine. The people's control committee severely punished mine director A. Frolov and other responsible supervisors. But where is the guarantee that, given existing practice in reporting and responsibility for the use of expensive equipment, the same will not be repeated here or at another enterprise?

Obviously, it is necessary not only to strengthen monitoring and responsibility but also to use material incentives in full measures to save metal, spare parts and other materials, as the Nagornaya Underground Mine of Gidrougol [Hydraulic Coal Mining Association], for example, has been doing for a long time. The party committee, economic supervisors, and the lead group of people's control were able to concentrate the attention of the whole collective here on savings and thriftiness and they ensured an effective demand and realistic prerequisities for preserving the people's property. The system of mutual monitoring produces great benefit. Its principle is simple and reliable: the tunnelers, on receiving conveyors, rails for laying track, and other equipment, are obligated, after completing the preparatory work, to transfer them to the breakage-front workers for operation. And the latter unfailingly check that everything necessary for normal operation is in place.

Several years ago a new form of accountability for turning unused metal supports and materials over to storage was introduced at the mine. In brief, each middle-level supervisor knows which and how much materials he should return to storage upon elimination of a worked-out longwall, and what and how much he will receive, let's say, from the breakage-front workers for repeat use, during assembly. If you did not stay within the task you blame yourself: you, along with the mine foremen, are deprived of a bonus.

And there is still one important "trifle." Mobile container-receptacles have been brought to each section, into which clamps and nuts, tie plates and bolts, and spare parts that have been picked up off the ground can be dropped. Each month the receptacles are sent to the surface and the property saved is carefully counted. Thirty percent of the cost of the materials, spare parts and other parts saved is paid to the brigade as an award for thriftiness.

The workers of the industrial Kuzbass came out at one time with initiatives for the effective and economical use of fuel and power resources, and they achieved many successes. Metallurgists of Zapsib [West Siberian Metallurgical Plant imeni 50-letiya Oktyabrya] and the Kuznetsk Combine imeni V. I. Lenin have long been famous as masters of rolling metal at negative tolerances and in the effective use of metal during all metal-conversion processes. The basin's miners have someone to be on a par with, someone to take an example from, so that the words about an economical economy will be translated into life.

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NEW PROCESS COULD PREVENT COAL LOSSES DURING TRANSPORT

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 24 Jun 82 p 2

[Article by V. Kladchikhin: "Veil Over the Coal Car. Strict Accounting for Fuel and Energy"]

> [Text] From the editors: The problem of the need for protecting coal from being blown away during hauling by railroad has been brought up many times in the pages of SOTSIALISTICHESKAYA INDUSTRIYA. But experience has shown that solution of the problem is being slowed down by bureaucratic squabbles and lack of coordination between allies. In publishing this article the editors hope that interested parties will finally find a common language and put a reliable damper on the path of massive fuel losses.

[Text] Who has not seen coal trains enveloped in a black shroud? Up to 50 million rubles are spent every year by railroads to clean coal dust from the roadbeds.

And at the same time, there is a fairly effective means of dispensing with the problem. In operation at the Abashevskiy concentration mill in Kuzbass is a facility for applying a water-mazut emulsion to the surface of the fuel in the car.

"It was put into industrial operation seven years ago" we are told by mill director V. Yurmazov. It was learned in tests that not only mazut, but depleted oils and other petrochemical wastes can be used. To this day they speak well at the mill of Doctor of Technical Sciences V. Ivanov, Candidate of Sciences I. Radovitskiy and other workers of the Institute of Fossil Fuels who were instrumental in installing adjusting and starting the equipment.

The outlays of 160,000 rubles were paid back within a year of operation, and now the yearly savings exceeds 220,000 rubles. Over the past five years about 80,000 tons of costly coal concentrate has been saved from blowing away.

The Abashevskiy experience has been demonstrated at the Exhibition of Achievements of the National Economy of the USSR. Central television has brought the news to the Soviet general public. The newsreels have made a documentary film. Numerous prospectuses have been published. In short, there is no cause for complaint about lack of coverage. Nevertheless, the coal dust lies over the Kuzbass railroads as before, and elsewhere as well. Why?

Let us put this question to those who by logic should adopt leading experience, since they are close at hand.

"It was suggested that a facility of this kind be built at one of our mines" recalls V. Cheremov, technical director of "Prokop'yevskugol'". Now I have even forgot which one it was. Reasons? There aren't any save that we just dont't have time to handle all construction."

V. Utkin, chief of the transportation administration of "Gidrougol'", as if continuing this thought, tells us: "We would have to build our own depot first. Depot, inspection channels, we don't lack for priority projects. Until we take care of them, there is no point in talking about the shielding unit."

Things are exactly the same with other neighbors. Every day Kuzbass sends out 6,500 cars of coal. About a ton and a half of fuel flies out of every one of them. In other words, some one of the most productive mines in the basin operates literally into the wind. There are data on an even greater scale. Nationwide, from 3 to 5 million metric tons of coal are blown out of transport each year! This is the annual supply of raw material for a large electric power facility!

Nevertheless, until last year you could count the number of shielding units nationwide on the fingers of one hand. And at the same time, the Abashevskiy experiment has received official recognition. On 11 May last year, a decree was issued by the USSR Ministry of the Coal Industry stating that 35 such devices are to be built in the sector during the current five-year plan. The responsible parties are the chief of the administration on long-range development of the coal industry and capital investments F. Kagan, and the chief of "Soyuzshakhstroy" Association, Ye. Strel'tsov.

I asked F. Kogan to acquaint me with the current state of affairs.

"Could you call back in an hour or so? I don't have the data right at hand."

An hour later, I was talking with his deputy, V. Filiponskiy.

"Recently shielding units have been put into operation on the Chervonograd and the Sholokhovskiy mills and are to be introduced at the Komsomol'sk and Dolzhanskiy-Kapital' mills. As you can see, we've covered Donbass, Rostov and Western Ukraine."

"But Kuzbass? It's from Kuzbass, not Donbass, that coal travels over the greatest distances."

"In Kuzbass there are not enough construction workers, and besides there is a shortage of housing and cultural amenities. We have to give those construction projects priority."

It would be hard to dispute such a weighty argument. Indeed the construction of housing and day nurseries is not keeping up with the demand. But not a single team could be found on these construction projects that had been taken away from building a dust-laying facility. Nor for that matter on the very sites designated by the decree.

According to the decree, a facility is to be started this year at Kiselevsk concentration mill. However, "Prokop'yevskuglestroy" Trust has yet to drive the first peg on the project. Also in this year, coal cars are to be sprayed at the Belovskiy and Anzhersk mills. But there is no hint of construction there either.

In short, the USSR Ministry of the Coal Industry is not utilizing the centralized method of construction during this five-year plan to build a single facility in Kuzbass. The decree, so late in coming, is not being met...

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PERMANENT APPROACH TRACK NEEDED AT BORODINO MINE

Moscow EKONOMICHESKAYA GAZETA in Russian No 34 Aug 82 p 18

[Article by B. Pichugin, chief of the coal industry sector of the Party Kray Committee: "The Difficult Roads of KATEK"]

[Text] Somehow nowadays when anyone talks about the Kansk-Achinsk Fuel and Energy Complex [KATEK], most people think about the facilities in the southern (Sharypovo) industrial unit. But KATEK also subsumes the Borodino and Nazarovo pits. The coal deposit is being worked here for the first time. Now both these pits are providing about 100,000 metric tons of coal per year.

The technical-economic indices that have been achieved in open-pit coal mining are much higher than the sector-wide average. This has been one of the weighty arguments in favor of accelerated development of the Kansk-Achinsk coal basin.

The circle of customers for Borodino coal is widening. Therefore completion of reconstruction on the existing pit is a priority job for miners and construction-millwright organizations relocated in the young city of Borodino. The goal is to introduce facilities for extracting 2.5 million tons of coal in 1982 with as much of an increase in 1983.

Right now there is an urgent need for planning estimates. Funding has been assured for the planned volumes of construction and installation work. The construction of production facilities has been commissioned to the Borodino Mine Construction Administration of "Krasnoyarskugol'" Association. The installation of large excavators, which will be used in stripping work and in extraction of fuel is being handled by "Sibtekhmontazh" Trust. The collective of Construction Administration No 604 is erecting housing and public amenities. And the second electrified approach track from the Trans-Siberian Railroad to the mine is being built by "Krasnoyarsktransstroy" Trust (managed by V. Yakushin).

During the first six months, the work of transport builders had been extremely unsatisfactory. And it did not improve in July. This is a threat to completion of the assignment on the development of the mine as a whole.

It was stipulated in the Borodino mine reconstruction project that until its yearly capacity had reached 16 million metric tons, coal would be hauled out on a single approach track. Then it was planned to put a second electrified track into operation, expand a number of stations and turn the whole branch line up to Ugol'naya II station over to Krasnoyarsk Railroad. Such a transfer has no formal significance, it is economically justified since it will cut nearly an hour off the turnaround time of cars and will enable more precise organization of coal haulage.

Even now, 20 million metric tons of fuel are being extracted per year. It is very difficult to haul it out. It cannot be managed without putting the second track into permanent operation in the near future. Do the directors of "Krasnoyarsktransstroy" know about this? They do, but they do not have the proper attitude of responsibility toward expeditious completion of the job of laying the track. This is not the first year that work has been lagging. In the last six months, less than a third of the yearly work volume has been done.

The customer -- "Krasnoyarskugol'" Association -- has proposed that "Krasnoyarsktransstroy" include construction and installation work costing 4.1 million rubles in next year's plan for the second track. The trust has agreed to take on 2.1 million rubles, which is half the amount assigned for the current year.

Within two years, the total extraction of coal is to be increased by five million metric tons. Hauling it out of the mine may become a bottleneck. We will have to pay dearly for introducing facilities for "truncated" startup complexes, for completing projects after they have been put into operation.

We needn't go far for examples. In February 1982, papers were signed on putting a temporary approach track into operation to the industrial yards of Berezovka mine No 1 with a sworn promise to get it into permanent operation in the first half-year. The approach track is now carrying about a hundred coal cars a day, as well as bringing in materials for mine construction. The trains travel at a speed of 5-10 km/h -- the state of the track does not permit faster travel.

No steps are being taken to eliminate the inadequacies. Now the directors of "Krasnoyarsktransstroy" say that perhaps they will complete work on the track in the next month or two, on condition that coal haulage is completely stopped. And the promises made at the beginning of the year have been tossed aside.

We must not permit a repetition of this story. Interruptions in haulage of coal from the Borodino mine may complicate the supply of fuel to consumers in Krasnoyarsk and in the eastern rayons of the kray, as well as in Irkutsk Oblast. The miners and workers in the loading and transport administration are unanimous in their opinion -- no temporary solutions or compromises, just put the approach track into permanent operation! Borodino Gorkom of the Party is of the same view. Its workers are constantly on the construction site.

Right now less than two-hundred people are employed on the project, but at the beginning of the year the plan called for three-hundred workers to finish the job. However, now since the lag has increased we need at least twice as many workers and considerable improvement of labor organization so as to have the work done in a favorable period.

The situation that has arisen requires the intervention of Deputy Minister of Transport Construction T. Gogichashvili. We call upon the Ministry to see to reinforcing the material and technical base of the trust.

Subdivisions of "Krasnoyarsktransstroy" Trust are now experiencing a shortage of materials, especially crossties. At the same time, a large number of ties are waiting for shipment from Lesosibirsk Station and some others. And the Ministry of Railroads has reconciled itself to this situation. The delay in construction of approach tracks and development of station management in the vicinity of enterprises of the Kansk-Achinsk Fuel and Energy Complex must be overcome in a short time. There are real capabilities for doing this.

This is the conclusion that has been reached by the coordination council on setting up KATEK affiliated with the Kray Committee of the Party. At a session in Sharypovo recently, this committee looked into the progress of work and shortcomings of both clients and subcontractors, indicating steps to eliminate dereliction.

Timely introduction of facilities in mines and at Berezovskaya GRES-1 will depend in large measure on the efficacy of solutions for the problems of finishing approach tracks.

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FUELS

INCREASING ASH CONTENT OF L'VOV-VOLYNSKIY COAL NOT TREATED PROPERLY

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 15 May 82 p 2

[Article by L. Sotnik (Chervonograd): "Down to the Last Gram"]

[Text] They had been waiting for it with impatience and hope. At Ukrzapadugol [Western Ukraine Coal Production Association] underground mines they were saying of it: "It will help us greatly. In any case, the coal-quality problem will be solved once and for all."

"It" was the central enrichment plant, known more briefly as the TsOF, which was being built in the Lvov-Volynskiy Coal Basin.

But somehow we do not see joy on the faces of those who had awaited startup of the plant as if it were manna from heaven. V. Grigor'yev, director of Velikomostovskaya Underground Mine No 5, for example, does not conceal his negative attitude toward the new industrial giant: "It fell on our heads out of nowhere!" Association general director A. Kizub does not express such seditious thoughts but discretely omits the TsOF from the conversation.

And here is what happened: since startup of the plant, the number of underground mines in the basin that did not carry out the coal-mining plan has increased, and the supplying of fuel to the basin's two chief customers--the Burshtynskaya and Dobrotvorskaya GRES's--has deteriorated.

But what does the TsOF here have to do with it, I asked. In what way can the plant affect the mining? It has its own job--to separate coal from dead rock.

It turns out that it can. Let us imagine a situation: a trainload of coal from a mine that we know about arrives on the TsOF's siding tracks. The weight of the mined material shown in the accompanying papers is 1,000 tons. But after appropriate laboratory tests it turns out that the material's ash content is higher than that specified for the given mine by the plan indicator, and then....And then V. Grigor'yev learns that he has sent it not a trainload but two-thirds of a trainload and that his mine's plan for mining coal has not been overfulfilled, as had seemed earlier, but has been underfulfilled, with all the consequences that ensue from this.

Well, and what is bad about that, the reader thinks. On the contrary, it is good that the TsOF has begun to play the role of a barrier in the path of low-grade output. Let the miners refrain from exceeding the established norm for the ash content, let them mine high-quality coal, and then no one will dare to take from the amount mined even a kilogram, much less a ton.

This would be logical. But there are essential flaws in it that will be easier to understand if one gets down into the depths of the coal mines and of economics.

The Lvov-Volynskiy Coal Basin is 30 years old. Formerly, when breakage-face work was being done at seams a meter or more in thickness, coal quality problems such as this were practically nonexistent. But years have passed. The coal reserves of meter-thick seams have increasingly been depleted, and the miners have been compelled to undertake the development of thinner seams, 50-70 centimeters thick. The taking of wall rock--a purely episodic phenomenon in former times--became inevitable. Moreover, and we are not afraid of these words, it became a part of the technology. It is clear that under these circumstances coal quality began to be reduced, and the ash content rose. During the last 10 years it rose almost a tenth for the association, and in 1981 it averaged 30.3 percent. At some underground coal mines this level is even higher--up to half of the mined material.

These realities were well known both to Ukrzapadugol and UkSSR Minugleprom [Ministry of Coal Industry]. If one closes one's eyes to them, as is being done right now, it is scarcely possible to raise the fuel's calorie content. You will get something else: the teeth on the pinion gear of the mechanism that connects the miners with customers for the fuel will begin to crumble. And once that happens, the work of that tooth and of the others will begin to get worse.

And we are reminded, in this connection, of the recent meeting of mining brigade leaders that was convened at the initiative of the Chervonograd city party committee. Labor expenditures are growing, it was noted at this conference. Well, yes, the brigade leaders said, we also want the coal to have more calories, but you will not live by our dreams--the brigades have begun to thin out, the miners are leaving for other enterprises....

The association's economics service confirmed for us the fact that labor expenditures had grown. During the last decade they rose by 15.3 percent. During that same time the prime production cost of a ton of coal increased 2.01 rubles and instead of a balance-sheet profit of 12,562,000 rubles (1971), 56,871,000 rubles were lost in 1981.

And these also are realities.

What did the city committee's conference show? The fact that the normal moral and psychological climate that had been maintained for a long time by the basin's huge miners' collective began to change somewhat. The brigade leader began to look askance at the mine director, he at the TsOF manager, the latter at the "general," and he at the association director, to whom it sometimes seemed that the plant was overstating the ash content deliberately....And everyone looks for the guilty parties. The association general director poses to the ministry the problem that some mines will have to raise the ash-content norm, that they will do it in accordance with existing mine-geology conditions, and they hint at him: you are looking for an easy life?

The existing situation must be looked at as one instance of the unsuitable "ostrich wing" tactic. One "lowers" the plan, knowing ahead of time that it will not be attainable, and the other accepts it, knowing that it will not have to be reported....And then begins the tedium of getting revisions and a rescue of "the collective's interests...."

But even this is no argument, says the wised-up economics worker. Give these miners free rein and, just like that, they will, generally speaking, load empty **filler** instead of coal. To the miners, the only thing is the tons.... Well, several years ago even the author of these lines would have been in the ranks of the skeptics. It's entirely accurate: mining was measured in tons, and few worried about the quality of the tons themselves. But now an integrated system for controlling coal quality (KSUKU) has been worked out in the Lvov-Volynskiy Coal Basin and its introduction has started, and the Red Banner collective of Velikomostovskaya Underground Mine No 3 came out as the initiator of this good thing. We shall not tire the reader with a description of the system and figures that testify to its effectiveness (see V. Chernenkov's article, "Standart prikhodit v zaboy" [The Standard Comes to the Mine Face], in SOTSIALISTICHESKAYA INDUSTRIYA for 10 March 1981), and we will say but one thing: the system serves as an excellent counterweight to those who have been engrossed with the gross. A staircase of incentives was put together for it in such a way that each breakage-face worker and each brigade leader should strive (and strive!) to do everything possible to see to it that the inclusion of wall rock is minimal or is entirely excluded, so that the mined material sent to the surface will be comprised of as much coal as possible and as little dead rock as possible! Under the system's principles, the miner is rewarded not only for the quantity but also for the quality of the coal that is mined!

And it is very much a pity that in the hubbub of day-to-day affairs, in the pursuit of tons, the existence of the KSUKU and the necessity for introducing it into the basin was silently forgotten....

If one sums up the results of everything that has been said, then the following conclusion can be reached. The ash content of the seams cannot be reduced, either now or in the future, but it is possible and necessary to drive for coal quality. The specialists consider that for this purpose three tasks must be resolved: to adjust the plan of the underground miners' collectives to take into account the actual and increasing ash content and to consummate introduction of the integrated system for controlling coal quality at all the basin's mining enterprises, and to speed up the output of special machinery for thin seams. We do not say that these tasks will be easy, but USSR Minugleprom and Ukrzapadugol should undertake to resolve these problems more energetically. Life itself dictates this.

And so we have become convinced that the TsOF is not at all guilty of the difficulties that have existed in the basin. It has tried to the utmost to provide the customers, first and foremost the power-engineering workers, with high-calorie coal. But neither have the power engineers been too contented. Let us name this situation paradox No 2, and we shall try to look into it.

The fact is that coal for electric-power station fireboxes (even that of poor quality!) has simply become physically insufficient. A portion of the mined material, in passing along the preparation plant's operating chain, is, roughly speaking, subdivided into three fractions--coal for household needs, steam coal, and rock which goes to the dump. When it is considered that rock makes up almost half of the mined material, then it is not difficult to guess the fraction to which the actual weight of the fuel that is being sent to electric-power stations has been reduced.

It seems at first glance that there is no harm of any kind in this. But the whole point of it is that the dead rock is not so dead, for it contains 25 percent of fuel substance. Nowadays, million-ton dumps of rocks are being built up alongside the Chervonograd TsOF that are not being used at all, yet, for example, the Burshtynskaya GRES imports from the Donbass [Donets Coal Basin] each year up to 20 percent of the fuel consumed. In 1980 alone, the station had to overexpend 4,082,200 rubles under the category of "transport expenditures."

So what is to be done? Close the TsOF, bewail the millions spent on its construction, and return to the good old times, when coal was dispatched to power stations directly from the mines' tracks? No, and there's no sense in simply dumping seemingly dead rock. According to studies of specialists from Yuzhtekhenergo [not further identified] and the Institute for the Geology and Geochemistry of Fuel Minerals of the UkSSR Academy of Sciences, it can, when spiked with coal, serve fully as a fuel for electric-power stations, and, while this fuel will contain 50-percent ash, its calorie content will scarcely be less than that of Estonian shale.

Why won't this be enough?

The know-how to burn this type of mined material requires scientific development and broad experiments. Studies are needed of new design solutions that would compel low-calorie fuel to "work" at electric-power stations. And the close collaboration of the Union's Minenergo [Ministry of Power and Electrification] and Minugleprom and of scientific institutions is needed in solving all these questions.

And a last question: is the game worth the candle? It is certain that it will be. It is not economical to send coal to western areas of the Ukraine from the Donbass, which, because of its own insufficiency of fuel, is converting some of its thermal power stations to mazut. Local resources must be used. As a whole and completely. It is then that the economy will be economical.

11409
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FUELS

TRANSBAYKAL COAL MINES NEED MORE WORKERS

Moscow PRAVDA in Russian 15 Jun 82 p 3

[Article by V. Gorlov, chief of the Buryat ASSR Vocational and Technical Education Administration (Ulan-Ude): "Who Must Develop the Treasuries"]

[Text] I recently visited the Gusinoozerskaya Underground Mine. It and the neighboring Kholboldzhinskiy Strip Mine provide coal to the high-capacity Gusinoozerskaya GRES. A second phase of the power station is to be built. When it goes into operation the GRES's daily coal requirement will exceed 10,000 tons. Will this be within the capabilities of the local miners?

"We have vast fuel reserves, but there are not enough work hands," said underground mine director S. Tumurov with concern.

Such anxious words were heard also from the managers of a number of other mine enterprises of the Buryat ASSR and Chita Oblast.

The Transbaykal mining industry is actually being developed rapidly. In the not so distant future the miners will have still more business. The Baykal-Amur Mainline will enable a number of most valuable mineral deposits that are of nationwide significance to be placed at the country's service.

And there is so much coal in the Transbaykal! Its industrial reserves comprise billions of tons. The coal miners of the Kharanorskiy Strip Mine are to increase the mining of fuel substantially--by the end of the five-year plan they should supply energy to the like-named GRES, which is under construction. The new, large Tugnuyskoye field should be readied for development. Its annual capacity will be more than 10 million tons of coal. And there are many other places where it is necessary to apply the miners' skill, ability and persistence. In brief, the problem of reinforcing mining enterprises will become paramount.

How is this to be solved today? Studies by local sociologists do not produce a basis for optimism. More than 60 percent of all workers here are people 35 to 60 years old. When it is considered that a substantial portion of the miners go on pension at 50 years, then the state of personnel affairs cannot be called satisfactory at all. Very few young people work at Transbaykal mining enterprises. There are several reasons for this.

For example, in recent years the average monthly wage of workers of the most important Buryatia mining enterprises rose more slowly than they did for the country as a whole. Living conditions in our districts are severe, and the area is sparsely populated. And we are still building little housing for people here. There are not enough kindergartens, nurseries, schools, clubs and stores.

Mining industry managers and local party and soviet organizations are making attempts to solve the personnel problem. Thus in January the USSR Ministry of Coal Industry and Ministry of Education, in a joint letter, defined a plan for sending graduates of the 8th to 10th grades to vocational and technical schools. Deputy Minister of Nonferrous Metallurgy Yu. Andrianov in turn called the attention of enterprise supervisors to the inadequate work done at vocational and technical schools with pupils for Mintsvetmet [Ministry of Nonferrous Metallurgy]. Their letters were profound and well thought out, but the instructions contained therein, unfortunately, were not carried out.

There are in our region no vocational and technical schools for the coal industry at all, and for nonferrous metallurgy there is only a small vocational and technical school, which trains 30-40 people per year. At the same time, throughout the Buryat Vocational and Technical Education Administration alone, the output for other industries annually comprises more than 10,000 workers of almost 100 trades. According to the 26th CPSU Congress directives, the Ozernyy Combine will be built soon in the Transbaykal. Mintsvetmet has planned to have a PTU [vocational and technical school] under it. However, the realization even of this decision is being held back unjustifiably.

In brief, the situation has been so complicated that measures must be taken without delay to form labor collectives of mining enterprises with young workers of various trades. The first word here should be said by the Buryat ASSR Council of Ministers and the union branch ministries. Buryat ASSR Gosplan should, taking plan indicators into account, develop as rapidly as possible a unified personnel policy for mining enterprises, and balance it with the labor resources that are available within the autonomous republic, taking population migration into account.

Special attention must be paid to developing vocational and technical schools. Qualified workers can be trained only in them.

11409
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GREATER INDUSTRIAL USE OF BITUMENS URGED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 15 May 82 p 2

[Article by A. Zeninskiy, manager of the Economics Laboratory of the All-Union Scientific-Research Institute for Hydrocarbon Raw Materials (Kazan): "Just Until the Tests"]

> [Text] What prevents the industrial use of natural bitumen reserves.

There are substantial reserves of bituminous rock--sands, standstones and limestones saturated with organic substances--in some parts of our country. The viscous crude oil removed from them can be a raw material for obtaining motor and boilerhouse fuel, asphalt, lubricating oils, coke and sulfur. Natural bitumens can also be used in the "natural" form--without any processing--for the construction of roads.

Natural bitumens began to be used for road topping in the USSR back in the middle of the 1960's. For example, a highways built with the use of bituminous rock under the difficult climatic conditions of Guryev Oblast is in a completely satisfactory condition after almost 20 years. However, the matter has not progressed beyond individual experiments.

Meanwhile, the shortage of bitumens, which are now obtained from crude oil, is one of the main causes of the low density of roads and, as a consequence, of the excessively great consumption of fuel for automotive hauling. Calculations indicate that a 1-ruble shortage of petroleum bitumens for road topping leads to unjustifiable expenditures of 1½ rubles in the national economy.

A number of decrees of the USSR State Committee for Science and Technology have been adopted about the problems of the industrial use of bituminous rocks. At the same time, many fundamental scientific and technical questions still have not been completely resolved.

Some of the main causes of this situation are a bureaucratic approach to the solution of this serious task and the absence of specific financing and incentives for the work. Few groups in institutes of the USSR Ministry of Geology, Ministry of Petroleum Industry, Ministry of Transport Construction, and other branches are occupied with questions connected with the use of natural bitumens. Research often is conducted by way of personal initiative. Such a lack of coordination does not favor the business.

Obviously, a radical change can be achieved if the conquest of bituminous rock is properly organized. It is completely obvious that more precise coordination of the conduct of a large number of research and industrial-experiment operations on natural bitumens is necessary, in order to organize the use thereof on an industrial scale in the next few years.

11409
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NERYUNGRI MINERS PLAGUED BY DUMPTRUCK PROBLEMS

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Aug 82 p 2

[Article by P. Rozentul', chief of the motor transport administration of "Yakutugol'" Association: "Why the 'BelAZ' is Standing Idle"]

[Text] Neryungri, Yakut ASSR--In the article "The Wherewithal for Taking Yakut Coal" (SOTSIALISTICHESKAYA INDUSTRIYA 7 Jul 82) we were told by V. Zhdamirov, general director of "Yakutugol'" Association, that the excavator is the primary means for stripping work. Boldly stated, but I think not quite exact. Stripping involves bulldozers, excavators and technological motor transport, and they are all "primary."

I want to stress the last link of this chain, a link no stronger, and perhaps weaker than the excavator link. Why? Because the "EKG-20" excavator that will determine the inventory of machines of this type working on stripping in the near future is already in existence and in operation. Intensive work is being done on perfecting it and eliminating design flaws. As to the "BelAZ-7521" dumptruck with load capacity of 180 metric tons (I remind you that last year 33 such machines were to be in operation at the "Neryungrinskiy" pit), we have not yet seen even an experimental model.

In order to get down to the coking coal of Southern Yakutia in the next two years we will have to haul away about 350 million cubic meters of rock! Right now this gigantic load is on the 180-ton "M-200" dumptrucks that we have in the association.

With proper use and maintenance, the "M-200" truck is quite capable of hauling a million cubic meters of rock a year, as demonstrated by the example of the Mezhdurechensk truck base in Kuzbass. Our best crews have an annual output of about 600,000 cubic meters. However, our average is 326,000 cubic meters, i. e. only about a third of what is possible!

What is the reason for this? Briefly, the level of technical servicing of the "M-200" dumptruck does not correspond to its level of complexity. The vehicle is literally crammed with up-to-date automatic, electronic and hydraulic systems. The driver needs a secondary education as a minimum, and only an engineer can handle troubleshooting, direction of technical servicing and repair.

This work requires well-equipped, warm, well-appointed enclosures, so-called technical posts. According to calculations, we need 22 such facilities. We have only two inadequate unheated temporary sheds!

The responsible party for ensuring conditions for adequate use of the "M-200" dumptrucks is to be the technological motor transport base under construction in Neryungri and to be equipped with the last word in technical facilities. The estimated cost of the base is 78 million rubles. It was supposed to have been operational in 1979. However, even now, three years late, there is no assurance of imminent completion of this important project.

What has stretched construction out for so long? The main cause is the worthless job organization. "Promstroy" Trust (chief B. Borisov.) of "Yakutuglestroy" Combine is systematically failing to complete the plan. The construction site has no working force. It looks like the miner clients have reconciled themselves to such a situation even though the truck base is project number one. Without "wheels for the stripping" there will be no stripping and no coke.

Now I would like to turn my attention to the equipment of the Belorussian Association for Production of Heavy Trucks, since I am still hoping that we will be seeing it in the near future. Preparations for this must be made beforehand. We know this from experience in using the "BelAZ-7420" 120-ton dumptrucks for hauling coal.

It is my opinion that the reason for the frequent down time and breakage of trucks is not the rough terrain as surmised by V. Zhdamirov, but rather a number of design failures. In all conscience, it must be said that the truck needs considerable improvement. The list of modifications was defined five years ago. Nonetheless, the specialists at the truck plant have not made a single fundamental improvement in design in all that time.

The Belorussian Association has a base in Neryungri. We have even allocated living space for the workers in this base, although it was a complicated job under conditions of acute shortage of living quarters! But in essence we have seen no help from the plant representatives. They have been concentrating attention on determining the errors of operators and gathering facts to bolster their own case rather than improving the vehicles. Another aspect of our activity is calling in repair teams from Minsk. Such a team will arrive, eliminate some local defect, and hardly leave when another is found and so on ad infinitum.

And this is why the time has come to improve the arrangement of interaction between the Neryungri miners and the Belorussian truck builders. Neryungri needs a "BelAZ" service group of skilled technicians who could resolve technical problems on the spot and take specific steps to eliminate flaws in the trucks. They should have at their disposal a renewable stock of guaranteed spare parts and other material means.

Of course, I realize that the Neryungri coal pit is a unique proving ground under experimental conditions. But this is no justification for a situation where, figuratively speaking, we do not ride on the trucks, but rather the the trucks ride on us. The severe conditions of the North require unification of the efforts of all those who are responsible for timely delivery of Yakut coke to the national economy.

6610
CSO: 1822/289

FUELS

BRIEFS

RIVER TRANSPORT INCREASES--Perm'--Despite low water in the Kama this summer, collectives of "Permlesprom" All-Union Association are successfully rafting commercial timber. Raftsmen from the most remote waterways, Ust'-Yaz'vinskiy and Ryabininskiy, have in large measure determined the schedule. More and more freight previously handled by railroads is being sent by water. To handle the traffic, the Kama River Navigation Company is reconstructing existing wharves and building new ones. For example construction has started near the port of Kambarka on a large coal transshipment complex. Portal cranes are being replaced here with high-speed car dumpers. [V. Biryukov] [Text] [Moscow SOTSIALISITCHESKAYA INDUSTRIYA in Russian 16 Aug 82 p 2] 6610

MINERS SURPASS QUOTA--Pervomaysk, Voroshilovgrad Oblast--The other day the miners of N. P. Letoshko's team fulfilled the nine-month plan at the mine imeni Menzhinskiy of "Pervomayskugol'" Production Association. Since the beginning of the year they have hoisted about 160,000 metric tons of fuel. The members of the team have pledged consignment of 60,000 metric tons of coal above the quota to consumers by the sixtieth anniversary of the USSR. By making able use of a narrow-grab facility with individual shoring, the miners are exceeding the plan each day by 130 metric tons or more. [V. Mikhaylichenko] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 7 Aug 82 p 1] Yuzhno-Sakhalinsk--Sakhalin miners are increasing the consignment of coal to consumers. Crews of excavator operators from the "Novikovskiy" pit, headed by machine operators M. R. Shlendik and M. P. Shalayev are working in close contact with the truck drivers. The "workers' relay race" has helped in winning first place in the competition of "Sakhalinugol'" Association, saved 80 metric tons of diesel fuel, and 126 kilowatt-hours of electric energy. The miners of "Lermontovskoye" administration of Uglegorskaya mine have sent off nearly two million rubles of goods above the plan. [N. Artapukh] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 21 Dec 82 p 1] 6610

CONSTRUCTION STATUS IN SHARYPOVO--Krasnoyarsk Kray--One of the youngest cities in Krasnoyarsk Kray, Sharypovo, is only one year old. The citizens proudly call their city the capital of KATEK, the enormous construction project of the Kansk-Achinsk Fuel and Energy Complex. However, its youth has not kept the city from celebrating its first birthday with glorious gifts of labor and with great triumphs in industrial and sociocultural construction. More than 50,000 square meters of living space has been made available, including the first nine-story apartment building with up-to-date accommodations. It is already occupied. A shop, 300-place dining hall, drugstore, café and youth center with 500-seat auditorium have been built. Nearly 300 children attend the new kindergarten. By the first of September, two new schools for 2,000 students will open their doors. A hospital and mechanized bakery are being constructed. A new airport is about ready to open. [A. Shcherbakov] [Text] [Moscow IZVESTIYA in Russian 10 Aug 82 p 2] 6610

MINERS AHEAD OF SCHEDULE--Perm' Oblast'--The miners of Kizelugol' Association are ahead of schedule in meeting their socialist obligations in honor of the sixtieth anniversary of the Soviet Union. They have resolved to bring the score of above-plan fuel to 100,000 metric tons by the end of the year. The leaders in labor competition are the collectives of the "Zapadnaya", imeni Krupskaya, "Kospashskaya" and "Gremyachinskaya" mines. Here they are ahead of schedule on preparatory work and are making the best use of equipment. The collective directed by Communist V. Moor has distinguished itself among sections from the "Kospashskaya" mine. [V. Ukolov] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 18 Aug 82 p 1] Krasnodon--A new labor victory in competition has been won by miners of the team led by Hero of Socialist Labor A. Kolesnikov, delegate to the Twenty-Fourth CPSU Congress from "Molodogvardeyskaya" mine of "Krasnodonugol'" Production Association. They have completed their eight-month quota ahead of schedule and have already been working for several days on the September quota. Since the beginning of the year, 400,000 metric tons of fuel have been hoisted, of which 100,000 are in addition to the assignment. [V. Mikhaylichenko] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 1 Aug 82 p 1] 6610

MECHANIZATION BOOSTS OUTPUT--Krasnoarmeysk--Miners of "Krasnoarmeyskugol'" Association report fulfillment of the six-month coal extraction program. Since the beginning of the year, 335,000 metric tons of fuel above the plan has been sent to consumers. The production cost of each ton has been reduced by 21 copecks. This success has been due to high organization of labor and mechanization of production processes. Currently in the association 95% of the fuel is extracted by mechanized facilities. And the mean daily load on the "iron" longwalls is more than 820 metric tons -- 4.6% higher than the established quota. There are no lagging enterprises in the association. The championship in socialist competition in honor of the sixtieth anniversary of the USSR is held by collectives of the "Tsentral'naya", imeni Stakhanov and "Kranolimanskaya" mines. [G. Dorofeyev] [Text] [Moscow SOTSIALISITHESKAYA INDUSTRIYA in Russian 24 Jun 82 p 1] 6610

NEW MINE CAR PROPOSED--"The time has come to retire conventional mine cars" is the opinion of specialists at Karaganda's "Giprouglegormash". They have backed up this viewpoint by producing a rubber-tired self-propelled car. It consists of a four-wheeled chassis with all wheels driven and controllable, and a dump conveyer with height that can be adjusted. The wheels on each side are turned by an individual induction motor with high-percentage slip. Three car speeds are provided by switching these motors. Minimum turning radius is 7.5 meters, which enables the car to fit into all existing mine junctions, and a two-position cab is provided for "shuttle" driving without turning. [A. Sokolov] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 13 Jun 82 p 2] 6610

HALF-MEGATON COAL OUTPUT--Krasnodon, Voroshilovgrad Oblast--A great labor victory has been won by the miners of a team led by Hero of Socialist Labor A. Kolesnikov from "Molodogvardeyskaya" mine. They have hoisted their five-hundred thousandth metric ton of coking coal since the beginning of the year. This high mark has been attained a month and a half ahead of schedule. The miners are getting ready for a worthy celebration of their professional holiday, Miners' Day. Every day they produce 400 or more metric tons of coal above their quota. The monthly work output of a worker at the cutting face has been brought up to 547 metric tons with a quota of 450 metric tons. Among those making the greatest contribution to attainment of collective success are experienced foremen V. Temnikov, V. Aristarkhov and V. Golotovskiy. [V. Mikhaylichenko] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 19 Aug 82 p 1] 6610

NERYUNGRI PASSES FIFTH MEGATON--The five-millionth metric ton of Neryungri coal has been transshipped by the collective of the Ugol'naya-Berkakit-Tynda Railroad Line since it started operation. [Text] [Moscow EKONOMICHEKAYA GAZETA in Russian No 29, Jul 82 p 3] 6610

COAL OUTPUT SURPASSES PLAN--Voroshilovgrad Oblast--More than 900 metric tons of coal a day at a quota of 750 metric tons is the output produced by a team led by Hero of Socialist Labor Ye. P. Zav'yalov from Stakhanov's imeni Il'ich mine. This young Komsomol collective works on a narrow-grab combine and gets the best results in the mine. Every member of the team is a jack of all trades who can do nearly all the production operations on the section. The leading team is sharing their experience with the miners of the other shafts of "Stakhanugol'" Association. [D. Chaban] [Text] [Kiev PRAVDA UKRAINY in Russian 9 Jul 82 p 1] Tula--"Plus a Quarter of a Million Tons". Such is the enormous boost over the plan provided by miners of "Novomoskovskugol'" Association in meeting their annual socialist obligations for extraction of fuel above the quota ahead of schedule. Leaders in the competition for worthy celebration of our nation's birthday are collectives of the "Progress", "Sokol'nicheskaya", "Dubovskaya", "Gornyak" and "L'vovskaya" mines. [I. Aryasov] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 24 Aug 82 p 1] 6610

MINERS AHEAD OF SCHEDULE--Rostov-na-Donu--In early August the miners of Gukovo's shaft imeni the Fiftieth Anniversary of the October Revolution had achieved a daily load of a thousand metric tons on each of their four longwalls. The leader in comeptition is the team of Hero of Socialist Labor K. Markelov, hoisting 3,500 metric tons of coal per day. This is 400 metric tons above quota. At the Don coal mine only 23 teams handle the daily thousand-ton load on the longwall. This has put the miners a week ahead of the production schedule since the beginning of the year. [V. Uzhakin] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 31 Aug 82 p 1] 6610

CHEAP FUEL--Raychikhinsk, Amur Oblast--A half-century has passed since work started on the development of Raychikhinsk coal deposit. Its mines are providing inexpensive fuel to many industrial enterprises and construction projects, collective and State farms in Amur Oblast and Khabarovsk Kray. The combine has won the everlasting praise of boiler rooms in the Far East. This combine has been awarded the Order of the Red Banner of Labor for their appreciable contribution to solving the energy problems of the Far Eastern Territories. The coal beds of the miners' city of Raychikhinsk are nearing the end. But the mining fame of the combine will not diminish. Geologists have discovered and are thoroughly prospecting new deposits of brown coal. One of these, the Yerkovetskoye deposit, is bigger than those from which fuel is now being extracted. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 27 Aug 82 p 1] 6610

MINING REPORTS--The "Berezovskaya" mine, a new large shaft of the Podmoskovsk coal fields has started production. The State committee has put the facilities of a starting complex into operation with planned output of 750,000 metric tons of fuel per year. After completion of construction at the end of the five-year plan, the annual rated output of the enterprise will double. "Berezovskaya" is being built by a collective of the "Mosbass-shakhtostroy" Combine with consideration of the latest advances in Soviet science and engineering. The main slanting shaft 450 meters long has been driven through the rock stratum to the 110-meter depth, the vertical ventilation shaft, an auxiliary shaft and kilometers of mine rooms have been driven and firmly shored. [Text] The "Mikhaylovskaya" mine, the largest shaft in the Karaganda coal fields, has been named in honor of Hero of Socialist Labor Tusp Kuzembayev, deputy of the Supreme Soviet of the USSR of the first convocation. The prize in honor of Kuzembayev is considered one of the most distinguished awards in socialist competition among mines in the coal fields. In the "Karagandaugol'" Association two mines carry the names of other founders of the third coal stokehold of the nation--Ivan Kostenko and Korney Gorbachev. [Text] [Moscow PRAVDA in Russian 29 Aug 82 p 1] 6610

MORE MINING REPORTS--On the eve of Miner's Day, labor reports on achievements of miners in competition in honor of the sixtieth anniversary of the USSR are coming in from various coal fields. Novokuznetsk--The team led by V. Vladimirov from "Abashevskaya" mine has extracted the 500,000-th metric ton of coal since the beginning of the year ahead of schedule. This is the mark previously reached by the collective in a year. The speedup has been made possible by mastery of the first mechanized "OKP-70" high-capacity cutting complex in the mine. [V. Kladchikhin] Karaganda--Miners of the shaft imeni Gorbachev, the oldest mine in the coal fields, are celebrating Miner's Day with high marks in labor. The collective met their eight-month plan ahead of schedule. About 170 metric tons of fuel extracted above the quota goes to their credit. High work results have been achieved by sections led by V. Belik, V. Petrov and Zh. Kozhakhmetov. They are all participants in the 500,000-ton competition. [B. Glotov] Tula--The State committee has put the new "Berezovskaya" mine into operation. The planned output of the first phase is 750,000 metric tons of coal per year. By extensive use of light metal structural components, subdivisions of "Mosbass-shakhstroy" Complex have erected the superstructure of the mine in a short period. "Berezovskaya" is the fourth mine put into operation in the Podmoskovsk coal fields in recent years. [I. Aryasov] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 28 Aug 82 p 1] 6610

CSO: 1822/289

CONSTRUCTION MINISTER DETAILS PIPELINE PROGRESS

Moscow PRAVDA in Russian 21 Aug 82 p 2

[Interview with Minister of Construction of Oil and Gas Industry Enterprises B. Ye. Shcherbina by the correspondents of TASS and APN; date and place not specified]

[Text] [Question] What is the current situation at the construction of the gas gas pipeline Urengoy-Pomary-Uzhgorod?

[Answer] The route which extends 4,451 km has already received 2,700 km of pipe. A total of 500 km of pipeline has been welded on the route. Up to 20 km of pipes are daily welded into lengths, more than 10 on the route. The calculated rates have been considerably exceeded. The basis for what has been attained and for increased advance of the plan is highly technical equipping of construction. Soviet industry has created effective and reliable equipment for working with pipes 1,420 mm in diameter under complicated conditions of the north.

The skill of the specialist, complete mechanization guarantee a continuous growth in labor productivity. Calculations show that for line operations on the gas pipeline, only 20,000 people are needed. The same number is needed for complete deployment of matters at all compressor stations.

[Question] Some agencies of U.S. information assert that the American embargo on equipment shipments for this trunkline will hold up construction for 2 years, and will force the Soviet Union to reduce construction of gas pipelines for domestic needs. What is your opinion on this subject?

[Answer] Transporting of gas on the pipeline will begin in January 1984.

I recall that the five-year plan stipulates construction of six large gas trunklines from the north to central regions of the country.

The gas pipelines Urengoy-Ukhta-Moscow and Urengoy-Petrovsk have already been opened. Work is being completed to construct the gas pipeline Urengoy-Novopskov. As labor resources and equipment are freed up on this object and they are sent to the Urengoy-Pomary-Uzhgorod trunkline, the rates of its construction will begin to increase.

Of course there will be no reduction in construction of domestic gas pipelines. Moreover, the sector has such potential that the possibility is currently being examined of constructing an additional seventh main gas pipeline in this five-year plan.

It is impossible not to stress that the builders of the gas pipeline are closely cooperating with the machine builders who have been obliged to supply in time the gas-pumping units, and at the same time guarantee start-up of the facility and the outlined schedule.

The assertions of some American information services that you have cited are either a consequence of a lack of knowledge about our potentialities, or a known lie.

[Question] Some information agencies of the West have shown reports that construction of the Urengoy-Pomary-Uzhgorod gas pipeline is using the work of prisoners. What could you say on this subject?

[Answer] Apparently the masters of disinformation are spreading more than one false rumor about this gas pipeline. There are no prisoners at the construction sites of the ministry as a whole, or on the gas pipeline Siberia-West Europe.

As I have already said, in order to solve such a large-scale task in a short time, it is necessary to have highly skilled specialists. In this case, this does not simply mean good workers, but experienced foremen of laying gas routes under northern conditions. At the construction site which the same Western journalists have called the "project of the century," precisely these personnel are working, workers, technicians and engineers with great experience. The overwhelming majority of them have more than 1,000 kilometers of gas pipeline construction behind them. I recall that in the country up to 2,000 km of pipelines of different purpose are annually opened, including field, with 5,000 km made of pipes 1,420 mm in diameter. In order to build them, it is necessary to have a good knowledge of the specific nature of the construction and to master complicated equipment, in a number of cases unique. The sector has many thousands of skilled engineers. The average age of the workers is about 30. The overwhelming majority of them have secondary education.

The success of the matter depends a lot on the high moral and ethical qualities of the builders. The collective of builders of the trunkline, unified, aware and friendly, is one of the leading teams of Soviet industry.

9035
CSO: 1822/251

PIPELINES

PIPELINE CONSTRUCTION PROGRESS REPORT GIVEN

Welding Begins in Tyumen

Moscow PRAVDA in Russian 13 Aug 82 p 2

[Article by V. Lisin, PRAVDA correspondent: "Urengoy"]

> [Text] Slightly more than a month ago, the CPSU Central Committee and the USSR Council of Ministers approved a patriotic initiative by the collectives of the enterprises and organizations to guarantee timely opening of the main gas pipeline Urengoy-Pomary-Uzhgorod. The reports of our correspondents relate what the current situation is at the important construction site.

The settlement of Beloyarskiy appeared above the helicopter like an enormous white bird which had sat down to rest in the overflowing sea of the taiga. Here is one of the bases of the Tyumen builders of the main pipeline. The settlement is living a normal life: it is preparing for the winter season, welding large-diameter pipes on the stands, building compressor stations and pumping gas.

The subdivisions based in the Beloyarskiy trust "Kazymgazpromstroy" is erecting the compressor station at the Nobopskov "pipe" at intensive rates, triple the standard schedule. The builders are hurrying to pass as fast as possible to the new route corridor where they will lay the export trunkline: the first landing party on the platform of the future Verkhnekazymskiy compressor station which is 70 km from Beloyarskiy has already landed.

This fact is remarkable. It was suggested that foreign equipment be used namely at the Verkhnekazymskiy compressor station. In order not to reduce the work rates, the colleagues of the Donets "YzhNIIgiprogaz" quickly prepared new planning-estimate documents which were sent by airplane to Tyumen.

The trust "Kazymgazpromstroy" has been building compressor stations for almost 10 years already. Fifty of them are successfully operating. There are stations on domestic equipment, by the way, the majority of them, but there are also imports. The workers and the specialists of the trust install equally successfully both our machines and foreign ones. The most richest experience has been accumulated here. The builders are working on the minimum schedules.

Several years ago, because of the lack of roads, life on the route came to a standstill in the summer. Now on almost all the thousand-kilometer Tyumen branch of the trunkline which stretches from the Urengoy tundra to the rocky spurs of the Ural Mountains, work is boiling. Five hundred kilometers of route have already been cleared and field cities are being erected.

The Tyumen workers are already welding the pipeline in three places. One of the first to begin laying the trunkline was the famous collective headed by USSR State Prize Laureate B. Diduk from "Severtruboprovodstroy." On the unstable log roads and in the clouds of swamp blood-sucking flies the experienced specialists have already connected into a line the first kilometers of pipes in the Yamal tundra. This is the very beginning of the route. Slightly to the south, already in the taiga, the welding columns of "Priob'truboprovodstroy" are working. On the little known stream Amne, using the spring floods, all that was necessary was brought in in order to lay 30 km of finished trunkline. The swamps which are impassable in the summer season do not allow the collective of the SU-20 to do more. On the other side of the Ob, closer to the tops of the Urals, another subdivision of this same trust, SMU-61 is working on the trunkline. About 90 km of trunkline will be laid during the summer, Glavsibtruboprovodstroy reported to us.

"This is a lot," said the head of the Tyumen central board N. Kurbatov. "Nevertheless our main work is in winter when the heavy equipment can travel on the route. Even now we have compiled for each of the twelve production lines of the transcontinental trunkline a detailed schedule with monthly breakdown. It is planned to finish the work on the line section of the gas pipeline in March of next year. This is earlier than planned."

Gas Pumping Station under Construction

Moscow PRAVDA in Russian 13 Aug 82 p 2

[Article by R. Sabirov, PRAVDA correspondent: "Pomary"]

[Text] A considerable part of the trunkline which will provide an invaluable gift of Siberian oil-natural gas to the center of the country, to the western boundaries of the country, passes over the territory of the Tatar and Mari Volga region.

A freshly cut clearing leads to the construction platform. Here everything is new. On the 3-kilometer road bed, without waiting until it is covered with reinforced concrete plates and is asphalted, trucks are already hurrying back and forth. A temporary housing city has been erected for the builders in which there is everything needed for normal work and daily life: both heat and hot water supply, a cafeteria with snack bar, and a sports complex. Here the workers of the mobile mechanized column from trust No 7 of the production association "Tatneftestroy" have based themselves. They are faced with building a powerful compressor station for gas pumping here, not far from the Mari settlement of Pomary.

"Pomary is the intermediate station of the trunkline," relates the chief engineer of the mobile mechanized column G. Zakirov. "It is hardly the most powerful of the 43 compressor stations that it is planned to build on the entire length of the enormous route. Here it is planned to install machines of import production. But the administration of the United States has decided to disrupt our plans."

It did not happen! The collective of the Leningrad association "Elektrosila" started to fabricate powerful high-quality machines for our and dozens of other stations. The example of the Leningraders was followed by many other domestic enterprises. Soviet equipment will be no worse than the American and will arrive at the construction site on time and ahead of schedule.

However replacement of the machines requires redoing of the projects, there is nothing to be done. There is nothing to be done here. But reports are already coming to Pomary from Donets and Leningrad: the specialists of "YuzhNIIgiprogaz" and the Leningrad institute "Giprosbetsgaz" have been obliged to finish ahead of schedule all the work associated with planning the Pomary gas pumping station.

The work rates are high. A concrete solution assembly, systems of heating and water supply for the housing in the city are being rapidly constructed. The administration of mechanized operations is conducting vertical planning of the platform for the future gas pumping compressor station.

"A lot has been done," adds the bulldozer operator G. Krylov. "In two months we have removed over 28,000 m^3 of ground. Next is driving in the pilings under the foundation of the main building."

It is also lively at another platform where the workers from the section of the trust "Tatnefteprovodstroy" are laboring. They are faced with digging trenches and laying 71 km of pipes from the Tatar aul of Bishnya to the shores of the Volga.

"The pipes have already arrived," reports the foreman of the section A. Bychkov. "The route has been outlined. The equipment is here. Now we will finish equipping the semiautomatic stand for welding pipes of large diameter and will start laying the trunkline."

At the platform of the Tatar aul Biryuli precisely the same test stand has already started to operate. Over 30 km of pipes have been welded into lengths.

Swamp Vehicles Created

Moscow PRAVDA in Russian 13 Aug 82 p 2

[Article by A. Kurkov, PRAVDA outside correspondent: "The Swamps Did Not Interfere"]

[Text] The local plant "Ukhtagazstroymash" has started to manufacture new swamp-traveling (on wide caterpillar tracks) trailer pipe length carriers PTG-251 which are extremely needed by the builders of the main gas pipelines. This machine is capable of shipping to the route on marshes and bogs a 36-meter pipe length made of pipes 1,420 mm in diameter weighing 25 T. The trailer is transported by a swamp-traveling tractor. The pipe length carrier from No 1 has been sent to the route workers by Glavkomigazneftestroy. The builders of the gas pipeline Urengoy-Pomary-Uzhgorod are also receiving them.

The plant "Ukhtagazstroymash" which in May marked the first anniversary of its existence, is manufacturing highly passable wheeled pipe carriers with load capacity of 25 T based on the tractor K-701. Now another innovation is being mastered here which the builders of the underground gas rivers are already waiting for. This is the mobile eight-station electric arc welding unit AS-81. With its help butt joints of large diameter pipes can be connected under field conditions immediately by eight welders. The first of these units have already been sent to Tyumen to the builders of the gas pipeline Siberia-West Europe.

9035
CSO: 1822/260

PIPELINES

TURKMENISTAN GAS PIPELINE CONSTRUCTION PROGRESS OUTLINED

Ashkabad KOMSOMOLETS TURKMENISTANA in Russian 3 Aug 82 p 2

[Interview with Viktor Andreyevich Talday, delegate to the 26th CPSU Congress, head of the all-union industrial association "Turkmengazprom" by outside correspondent Yu. Vetkalov; date and place not specified: "Who 'Plays' on the Pipe and Why?"]

[Text] The length of the main gas pipelines of our country exceeds 130,000 km. This is the world's largest system of transporting blue fuel. An important role in it is given to the gas extracting complex of Turkmenistan which today by right occupies one of the leading places in the USSR. Here in Karakumy, the known gas pipeline Central Asia-center of the country begins. The steel arteries become more powerful and filled with each year. This was predetermined by the selfless labor of the explorers of the depths who reveal new promising fields, and the efforts of the builders and operators, each of which strives to do the maximum at his work place.

As is known, in recent years the self-named opponent of our gas workers has become none other than the president of the United States of America, Mister Reagan. He apparently cannot bear that the blue fuel extracted in the country of the Soviets will enjoy greater demand abroad and not in words, but in deed is becoming a symbol of peace and friendship on the European continent. Thus the especially economic concepts "gas and pipes" have now acquired an especially pronounced political tone and have been translated into an important frontier of struggle for further strengthening and development of detente.

The contribution of the gas workers of Turkmenistan to this struggle, the course of their fulfillment of the assignments of the 11th Five-Year Plan is discussed today by the delegate to the 26th CPSU Congress, head of the all-union industrial association "Turkmengazprom" Viktor Andreyevich Talday who responds to the questions of our outside correspondent Yu. Vetkalov.

[Question] What is the gas extraction complex of Turkmenistan and what is its role in the country's energy balance?

[Answer] The blue fuel which is currently extracted in Karakumy enters the unified system of gas supply of the USSR. It is natural that it directly participates in the export supplies. Being an integral part of the entire gas extracting complex of our country, Turkmenistan intensively continues to increase the detected reserves and to extract this universal raw material which powers plants and factories, is widely used in daily life, and serves as an irreplaceable original material for the chemical industry.

The 26th CPSU Congress has set before us a great and important task of bringing gas extraction in the republic by 1985 to 81-83 billion m^3. Our republic will strengthen even more its position as second after the RSFSR gas extracting base of the country. For this purpose a target comprehensive program has been developed and is successively being implemented. It includes measures for exploring new promising gas provinces, the most rapid build-up and start-up of fields of blue fuel. An example is the famous Dauletabad field which is located in the foothills of Badkhyz. It was discovered in the previous five-year plan. Now drilling out of areas and construction of the production base is going at full speed. A lot of work lies ahead. Its goal is in the beginning of 1983 to already guarantee supply of blue fuel of Dauletabad to the gas pipeline "Central Asia-center of the country." I am confident that the plan will be implemented on time and the Turkmen gas, as before, will pass to the consumers precisely on schedule. In this case the export shipments in no way will affect the satisfaction of the current needs of the population and the national economy of the country.

[Question] What difficulties are encountered on the path of our gas workers? How essentially do they feel the effect of the ambitious actions of Reagan's policy?

[Answer] The work of the gas workers has always been difficult. It has become even more labor intensive and complicated now when they have to reach the underground storehouses through loose sand which is difficult to pass through, groundless waters, and populated areas. Each time they have to create again the necessary social structure in uninhabited places, lay roads, build housing, start up production facilities. Making wells is also generally done under extremely complicated geological-technical conditions. This requires from our drillers highly professional skill, great civil courage and persistence. There is a similar situation with the actual extraction of gas. The blue fuel of Karakumy has a whole series of admixtures which make additional requirements for the work of the operators. But they have good quality domestic equipment which is capable of successfully solving the developing problems and successfully competes with similar mechanisms of foreign firms.

Thus the attempts of Mister Reagan to play a solo on the pipe and to interrupt the mutually advantageous "gas-pipe" contract is nothing else than a false note.

It is remarkable that the actions of Reagan have not found support even in the West among the traditional partners of the United States for conducting a rigid course of anti-Soviet policy. There can be no doubt that the efforts of Reagan to undermine the mutual confidence of the interested parties will not be successful, and the notorious Reaganomics will not work even here, as it did not work in solving many other international problems from which the United States wanted to extract benefit in a unilateral order.

[Question] At the same time it is impossible to be complacent? The gas workers, like all workers of the republic need to observe a strict regime of economy and conservation and to rely more broadly on initiative and experience of the leading workers of production?

[Answer] This is precisely the situation in the gas industry of the republic. For effective protection, for example, of the fittings of the gas wells inhibitors are successfully being used, different chemical additives to the gas. They have been developed in our country and are good protection for the pipes from the effect of an aggressive medium. The gas pipelines are also protected by special materials. This increases their service life, improves stability in high temperatures, etc. The efforts of our efficiency experts and inventors who are persistently searching for reserves so that the developments may be introduced more rapidly into daily practice are constantly aimed at improving the service life of the equipment.

[Question] What will be the response of the gas workers of the republic to the improper intrigues of the White House?

[Answer] The gas workers as a whole are successfully fulfilling the outlined program. The other day, for example, the field at the Molla-Kera field which is in the Maryy Oblast was opened and the separator compressor station at the Achak field was started up.

The socialist competition of the workers which has developed in the sector is yielding good results. It is occurring under the motto "60 shock worker labor weeks for the 60th anniversary of the formation of the USSR!" Two boreholes and one brigade of underground and major repair of wells have already fulfilled the assignment for the second year of the five-year plan. These are the collectives of Ch. Charyyev from "Shatlykgazdobycha," M. Khaydarov from the Chardzhou administration of exploratory drilling and Ya. Kaminskiy from the South Turkmen administration of exploratory drilling. A total of eight labor collectives are now working on the 1983 schedule. In addition, over 30 subdivisions of the sector have reported the fulfillment of the plan for the first 6 months ahead of schedule.

This year it has been decided to extract in addition to the plan no less than 650 million m^3 of gas.

[Question] What is the role of the Komsomols and the young people in implementing the outlined plan?

[Answer] There are many young people working in the system "Turkmengazprom." They have been entrusted with decisive sections of our production. For example, the brigade of drillers headed by the expert A. Ogonyan from Achak order "Sign of Honor" administration of drilling operations enjoys good fame. It has fulfilled the assignment for two and a half years by the day of opening of the 19th Komsomol Congress. On the right flank of socialist competition is the Lenin Komsomol Prize laureate for 1981, delegate to the 19th Komsomol Congress, diesel motor driver V. Popov. In May of this year a group of our operators for gas extraction participated in the international watch "Friendship." The accumulated knowledge and experience are now being successfully used by them at home, and they are attracting their comrades in work by their personal example.

By persistently achieving labor victories, the gas workers of Turkmenistan, like all the Soviet people say with one voice: "We will answer your actions with pipes Mister Reagan!"

9035
CSO: 1822/260

GTN-25 GAS PUMPING UNITS BEGIN SERIES PRODUCTION

Leningrad LENINGRADSKAYA PRAVDA in Russian 9 Jul 82 p 1

[Article: "GTN-25: Series Production Begins for the Gas Trunklines of the Country"]

[Text] Assemblies and parts for the first series gas-pumping units with power of 25,000 kW have been put into production ahead of schedule in the associations "Nevskiy zavod" imeni V. I. Lenin and "Leningrad Metal Plant." Realization of the target program for the most rapid increase in output of machines needed for timely start-up of the main gas pipelines has begun, and in the first place, the export Urengoy-Pomary-Uzhgorod. The Leningrad machine builders who were one of the initiators of the patriotic initiative of creating this transcontinental route, approved by the CPSU Central Committee and the USSR Council of Ministers decided to finish fabrication of the first series unit GTN-25 in December of this year.

The new machines whose main samples have recommended themselves well in tests make it possible to accelerate production of the gas trunkline extending over 4,500 km. Their use at the compressor stations together with the currently employed units of 10,000 kW reduce the volumes of construction-installation operations.

In order to master production of the new equipment, Leningrad has again used the experience approved by the CPSU Central Committee of the labor cooperation of the creators of the Sayano-Shushensk GES. New creative cooperation has been set up which has coordinated the efforts of 20 associations, enterprises, planning, design, scientific research and construction organizations. As a counterweight to the discriminatory measures taken by the U.S. administration, production of powerful machines has begun.

In order to master series production of units, the association "Nevskiy zavod" has expanded in-house metallurgical production. The 39th trust of Glavzapstroy [Territorial Main Administration for Construction in Western Regions of the RSFSR] is erecting a framework 20,000 m^2 in area. The trust Lengazspetsstroy together with the subcontracting organizations is beginning to lay on the bottom of the Neva towards connection of the special gas pipeline which is needed for testing machines directly at the enterprise. The units will be sent to the construction site in complete readiness. The new equipment is being put into operation in the associations "Leningradskiy zavod turbinnykh lopatok," and "Leningradskiy metallicheskiy zavod."

The collectives of the associations "Kirovskiy zavod," "Izhorskiy zavod," "Krasnyy treugol'nik" and other enterprises of the city have reviewed their plans, adopted additional socialist commitments and have also started fulfillment of the orders of the creators of GTN-25. Practically all the organizational problems have been solved and the competition which is broadly developing at the city enterprises will be an insurance that the series output of the new gas "transporters" will be mastered in the noted schedules.

9035
CSO: 1822/251

PIPELINES

YELETS COMPRESSOR STATION CONSTRUCTION COMPLETED EARLY

Moscow IZVESTIYA in Russian 6 Aug 82 p 1

[Article by V. Komov, in-house correspondent of IZVESTIYA: "Ahead of Schedule"]

> [Text] The Lipetsk builders have completed construction of the powerful gas compressor station "Yeletskaya" on the route of the Urengoy-center of the country gas pipeline in 9 months instead of 18.

The first teams of builders and the first mechanisms and machines appeared quite recently 10 km from the ancient Russian city of Yelets. Construction of one of the main gas-compressor stations has already been completed. During these months, 2,500 m^3 of precast and monolithic reinforced concrete were laid, 1,500 T of metal parts were installed and a lot of complicated equipment.

These results were no accident. The facility which is very important and urgent was entrusted to the general contractor, Order of the Red Banner of Labor trust "Lipetskstroy" whose experience was recently approved by the CPSU Central Committee.

"Honestly speaking," said the secretary of the CPSU obkom V. Lokotunin, "it was very complicated for the trust to fulfill this assignment. The fact is that the collective is coordinated and highly skilled. For all the years it has been involved in building metallurgical facilities: blast furnaces and rolling mills. This should also be said about the collectives of the 12 subcontracting subdivisions of the Ministry of Installation and Special Construction Work who actively participated in the construction of the station. They worked 100 km from their home base. But because of the experience, skill, labor enthusiasm and creative initiative, the assignment was successfully implemented with considerable advance of the schedule."

Here they worried in advance about the creation of the necessary living conditions for the workers, the organization of effective labor competition at all the sections, and carefully verified engineering preparation of production. Thus, the experience of by-assembly organization of work, installation of pipelines by enlarged blocks was successfully used. Precast reinforced concrete designs of foundations under buildings and equipment were widely used.

Work was done here round-the-clock. As soon as the slightest malfunctions were found, the headquarters immediately took decisive measures. When we conversed with the group of builders and installers, many of them said: "This is our response to the loud 'bans' of the American president. We have one more station to build soon. We believe that we will build it even faster. The transcontinental gas pipeline will inevitably be opened on time."

We are standing in an enormous compressor shop. It rises almost 30 meters. In the pipe hall and the hall of heaters everything is attractive because of its good quality, reliability and power. After a short time, the operators will start up this completely automated complex which was born in the year of the 60th anniversary of the USSR. It is symbolic that the workers from many cities from a number of fraternal republics have helped to erect the station.

9035
CSO: 1822/251

PIPELINES

GAS PIPELINE CONSTRUCTION BOOK REVIEWED

Moscow MOSKOVSKAYA PRAVDA in Russian 12 Aug 82 p 3

[Article by V. Semenov: "Gas-Pipelines"]

[Text] Comrade L. I. Brezhnev has called the construction of the five largest main gas pipelines West Siberia-center of the country and the export gas pipeline Urengoy-Uzhgorod the central construction site of the five-year plan. The total length of this transport trunkline which does not have analogs is 20,000 km (half of the equator). The power of the 356 compressor stations exceeds 24 million kW (this is 4 Krasnoyar GES's). The cost is R 25 billion (this is more than the outlays for construction of BAM [Baykal-Amur Trunkline], KamAZ [Kamsk Automobile Plant], VAZ [Volga Automobile Plant] and Atommash together).

These data are from a recent book "Gas-Pipelines."* Small in size, it is an interesting and information-packed story about the central construction site of the five-year plan. This story is not only interesting, but it is also instructive, in particular, to those who are attempting to use different types of "sanctions" to obstruct the development of our economy and mutually advantageous cooperation between the USSR and the West European countries.

It takes the Urengoy gas 100 hours to travel the 4,500 km and reach Uzhgorod on the western border of the USSR. But the builders had to pass swamps, make crossings over 561 rivers, and cross the Urals and Carpathians. Pipes sent by our partners from the FRG are already arriving. Builders from the GDR are participating in the work: in the Ukraine they are faced with erecting several compressor stations, houses as well as sections of the trunkline itself. They will use the experience which has justified itself in laying the gas pipeline "Soyuz": then builders from Hungary worked here.

Construction is being done primarily on the bases of Soviet equipment and technology. Thus, heavy pipe-layers are being used from the Sterlitamak plant which are not inferior to the known American machine "Caterpillar" whose shipments were cut off by the U.S. administration. In the Siberian swamps the builders are being helped by the swamp vehicles "Tyumen'" which traversed those sections where the imported all-terrain vehicles sank. The complex "Sever-1" which does not have equals in efficiency is being used for welding (firms of the United States and Japan have acquired licenses for the method of electric arc welding which it uses). The first 300 km of gas pipeline in the polar regions will be laid from unique multiple-layer pipes which withstand increased pressure: their production technology has also been developed in the USSR and they will be manufactured at our plants. The Leningrad workers and engineers are developing series output of powerful and economical gas-pumping units GTN-25 in unusually short times. They are not at all inferior to those turbines whose export to our country Washington is trying to block.

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* "Gas-Pipelines." A story about the central construction site of the five-year plan, "Izvestiya," 1982.

The builders are obliged to complete almost 800 km of the line section of the gas pipeline by the 60th anniversary of the formation of the USSR. The entire trunkline should open in 1984.

The Soviet builders are counting on their enormous experience. In their time they have laid a gas pipeline 1,500 km long from Urengoy to Chelyabinsk in 1 year. The United States took 6 years to lay a pipeline 1,300 km long under similar conditions in Alaska.

This book presents some of those thousands of letters that the newspaper editorial staff, construction trusts and organizations have received and they contain the same request: send us to the gas pipeline construction. "Our brigade is set to work on the most difficult sections of the gas pipeline," writes, for example, the driver of heavy machines Z. Akhmetov from Tajikistan. These letters are the best proof that the grand construction site has not only a reliable technical base.

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EXPERIMENTAL MULTIPLE-LAYER PIPES WELDED

Moscow IZVESTIYA in Russian 31 Jul 82 p 1

[Article by Yu. Perepletkin, in-house correspondent of IZVESTIYA: "Installation of Multiple-Layer Pipes Has Begun"]

> [Text] In the Berezovskiy Rayon, not far from the settlement of Beloyarskiy, welding of an experimental section of the gas pipeline made of multiple-layer pipes of domestic production has begun.

Work on the line is being done by the specialists of the SMU-25 from the trust "Priob'truboprovodstroy." We went to the site with the deputy head of the trust I. Gomonov where the brigade of communists A. Bragin was connecting the heavy three-link lengths.

Unusual heat from the north was complicating the already difficult work of the welders. But every member of the collective recognized the importance of the experiment that they were participating in.

"A multiple-layer pipe," says the deputy head of the SMU-25 Yu. Konoplev, "has many advantages, of which the main is the ability to withstand pressure of 100 atmospheres and more. This will make it possible to pump one-third more blue fuel on the gas pipeline of the same diameter as before. In the chief section of the export trunkline Urgenoy-Uzhgorod, multiple-layer pipes extend for hundreds of kilometers. But first we had to find all the features of the innovation here on our experimental section."

Four layers of metal sheet welded into a spiral comprised the body of the pipe. The sleeves, the ends, to put it more simply, are monolithic and weld together without any special complications. This is how it essentially turned out. The welders are working confidently and without interruption, however there are differences from the accustomed technology.

"Now it is necessary to make not four-five passes over the outside for each junction, but nine," explained P. Gashenko, the chairman of the Institute of Electric Arc Welding imeni Ye. O. Paton who joined the conversation. "The double number of seams prolonged the work for each junction by 1-1.5 hours. There are also other changes: the route for the multiple-layer pipes has to be prepared using a different technology, and more pipe layers are needed for lowering the pipes into the trench."

In the foreman's shop where the entire brigade had assembled, a conversation started about the ban of the Reagan administration on the shipment of equipment for the export gas pipeline. The workers with one voice proclaimed that the threats from across the ocean only give them strength and a desire to work faster and better. The guarantee of success is the "worker's relay race," integrated competition of hundreds of production collectives.

The brigade left the foreman's shop. Everyone took their places. The gas burners began to hum, heating the ends of the pipes. Their edges came closer together, and steel clamps of the centering device held the junction more strongly. Now the edges were closed. The sparks of the welding which were blinding even in the clear July afternoon immediately flared up.

Fulfilling the decree of the CPSU Central Committee "Work of the Ministry of Construction of Oil and Gas Industry Enterprises for Technical Re-equipping and Introduction of Progressive Methods of Construction," the specialists of the trust "Priob'truboprovodstroy" are performing an experiment whose value is difficult to exaggerate.

At the same time, on the shore of Kazym, equipment is being accumulated in expectation of a barge. This is the beginning of the transfer of the trust subdivisions to those points where they have to construct the export gas pipeline Urengoy-Uzhgorod. Everyone is full of desire to lay the steel channel for the gas river to West Europe exactly on schedule and with high quality.

9035
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LARGE-DIAMETER PIPE WELDING UNIT DESCRIBED

Kiev PRAVDA UKRAINY in Russian 30 Jul 82 p 2

[Article by A. Maliyenko: "Units for Gas Pipelines"]

> [Text] The Institute of Electric Arc Welding imeni Ye. O. Paton of the Ukrainian SSR Academy of Sciences received a telegram from Surgut. It said that the unit "Sever-1" had been sent to Kiev.
>
> This unit is the first of the new equipment designed for welding large-diameter pipes. Ten years ago the scientists of the institute were involved in developing this unit. The first experimental sample was ready in 1974. It was used to connect a steel length of the gas pipeline "Soyuz." Then the unit was sent to the northern Tyumen Oblast where the Vyngapur-Chelyabinsk trunkline was constructed. Now, after several years of work, "Sever-1" is coming back.

The specialists in the sector for introducing pipe-welding complexes of the institute imeni Ye. O. Paton have a unique work place: somewhere between the office and the workshop. It is more likely that both have been combined. Next to the chairs and desks there is a work bench where vises have been attached: here there is a drilling machine, tools and parts have been set up. It should be said that the colleagues spend most of their time not in the institute, but at the test site, where new units are tested, and at the gas pipeline route. The sector was set up not so long ago, before this a group of specialists was involved in developing the technology for contact-butt-joint welding of continuous melting. Although the first complex "Sever-1" has already been serving for a long time, this welding equipment even today does not have foreign analogs.

"The set of electric contact welding is constantly being updated," says the head of the sector, Lenin Prize laureate S. A. Solodovnikov. "We are searching for possibilities of improving the reliability of the unit assemblies and are striving to set up the technology better. Participating in the construction of five gas pipelines already, 'Sever-1' seems to have acquired experience: some shortcomings found during the work have been eliminated in it."

One can judge how much more advanced the machine has become by comparing the experimental sample with the recent series-produced units whose output the Pskov plant of heavy electric welding equipment recently mastered.

Whereas on the first complex, the pipes were centered in 10-15 minutes, this operation now takes only 1-2 minutes. The productivity of the machine has been enhanced 1.5-2-fold, it welds up to seven butt-joints in an hour. We note that the highly skilled worker manually can weld no more than one butt-joint per shift.

The units "Sever-1" will help the builders of the gas pipeline Urengoy-Uzhgorod to greatly accelerate the rates of building the trunkline. The complex is designed for operation under conditions from -40 to +50°. As we see, the range is fairly broad. The builders have already obtained new units. The institute specialists are helping in the adjustment of the equipment. The experimental plant which manufactured the experimental sample "Sever-1" has now started manufacturing spare parts for these units.

"As for the very first unit which can already be called a veteran, it will still serve us," continues S. A. Solodovnikov. "We are thinking of using the complex for studying the working processes and experiments. By the way, it has a younger brother "Sever-2." This unit will connect butt joints of pipes 1220 mm in diameter. A month ago it successfully passed tests. Now the institute is involved in developing a universal machine for welding pipes from 1020 to 1420 mm in diameter. Searches are underway for the possibilities of mechanizing pipe welding on curved sections of the route. This will permit the manual labor of the welders to be completely switched to the shoulders of the machines."

9035
CSO: 1822/260

PIPELINES

PIPE LENGTH CARRIERS SHIPPED TO TYUMEN

Baku VYSHKA in Russian 5 Aug 82 p 2

[Article by V. Korin: "Pipe Carriers for Tyumen "]

[Text] To the question of how the work is going, the young mechanic Nasib Aliyev who was replacing the brigade foreman these days, cheerfully answered:

"Everything's in order, we are coping with the monthly assignment."

But when we were walking through the narrow passage of the shop where almost everywhere you turn you are stepping across sheets of rolled metal, and we passed to the blacksmith's section, I found that it was not so simple to achieve high output under these constricted conditions. The production areas of this shop are very much in need of reconstruction and expansion. However the brigade of Yuriy Yelin that was recommended to me in the party committee of the machine construction plant imeni V. I. Lenin is constantly overfulfilling its planned assignments. The 6 month plan was completed by the assemblers with good indicators, 110 percent. In addition to the main program, they also fulfilled the program for output of items of mass consumption: supports for refrigerators and folding machines.

The machine construction plant imeni V. I. Lenin is comparatively small in the association "Soyuzneftemash," but it is associated with many enterprises. Over 80 plants and enterprises supply it with items on contract bases, and it in turn, supplies the plants imeni Lieut. Shmidt and imeni B. Sardarov, as well as the Groznyy enterprise of oil machine construction on a cooperative base. Its main product is pipe carriers and pipe length carriers. Today they are going to all the fraternal republics. But mainly, these machines are going for the construction of the Siberian-West European pipeline.

The brigade of Yu. Yelin from the preparation shop has been given a large role in the coordinated rhythm. More than 100 names of parts which will be assembled into assemblies and units of the pipe carriers are being manufactured by the assemblers of this collective. The stands, safety plates, generator frames, and casings go from here to the assembly shop, and it can be considered that the brigade of preparers "supplies" the entire plant which manufactures 75-80 types of carriers per month.

The difficulties of its work are rising: they have just succeeded in mastering the output of pipe carriers based on the chassis ZIL-131 and the plant will begin to set up output of these machines based on KrAZ this year. But the brigade has assembled people who do not stop before difficulties.

I had the opportunity of hearing about the special "Yelin" style of work. The fact is that a worker dynasty is laboring in this brigade. The father, boiler maker Nikolay Yelin, worked here for over 40 years, and upon retiring gave the brigade foremanship to his son Yuriy Yelin. His other son Anatoliy is working in the same brigade.

I was not able to meet with the brigade foreman himself, he had gone on vacation, but judging from how skilfully his replacement Nasib Aliyev was organizing the work, one could understand that he had been well trained by the brigade foreman.

"Our brigade has started a shock-worker watch in honor of the 60th Anniversary of the Formation of the USSR," said the candidate for membership into the party Nasib Aliyev. "The 38th week was dedicated to the workers of transport, including pipe carrier transport. These days we are working in a special way, intensively. By the end of the week we had supplied 75 sets of equipment for the pipe carriers. We will work with the same high productivity in the new shock-worker week dedicated to the builders."

It should be noted that since the beginning of the year the plant workers have sent to the Glavtyumen'neftegaz 33 new pipe carriers. The plan for shipping the finished product has been fulfilled ahead of schedule.

A day before I came to the plant, there was a party meeting there at which the decisions of the May (1982) Plenum of the CPSU Central Committee were discussed. Nasib Aliyev related how he and his comrades are striving to make their own worthy contribution to solving the food program. Many years of patronage have connected the plant workers and the workers of the kolkhoz imeni Nasibov of the Belokanskiy Rayon. The machine builders are supplying the kolkhoz workers with pipes, roofing shingles, electrical equipment, and are actively participating in the construction of a new parking area for agricultural equipment.

"The fellows from our brigade," Nasib expressed the common opinion, "have decided to visit the kolkhoz and to help with their personal labor those under their patronage.

9035
CSO: 1822/260

FIRST PIPE SHIPMENT ARRIVES IN YAMAL

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 1 Aug 82 p 1

[Article by A. Vinogradov: "Caravans Travel Through the Ice*"]

[Text] The motorboat "Dmitry Donskoy" came to Novyy Port with the first caravan of ships that delivered freight of this year's navigation on the northern sea route to Yamal. There were 850 large diameter pipes in its hold, supplied by the West German firm "Mannesman" on the "gas-pipes" contract for the builders of the main gas pipelines West Siberia-center of the country, including the export line Urengoy-Uzhgorod.

The Komsomol-youth crew of "Dmitry Donskoy", one of the best in the Murmansk marine steamship company is constantly among the leaders of the socialist competition.

I ask the senior assistant to the captain Sergey Kuznetsov to talk about the last trip.

"The port workers of Bremen guaranteed rapid loading of the ship, in only 2 days, despite the fact that we had to carry pipes with plant insulation requiring especial accuracy in loading and unloading operations. We generally have a precise business contact both with the representatives of the firm, and with the administration, and the port workers. This is not the first year we have been working together. This is why we understand the powerful wave of dissatisfaction with the irresponsible sanctions by the American president to reduce shipments of machines and equipment for construction of the Urengoy-Uzhgorod gas pipeline. The short-sighted actions of Reagan are primarily a blow to thousands of workers and employees in the enterprises of the Western countries who cooperated in the construction of the export trunkline from the Tyumen north. They would be threatened with unemployment if there was an interruption in the construction."

The northern sea section of the route was passed under the guidance of the nuclear powered vessel,"Lenin." A very unpleasant ice situation developed at the entrance to the Ob Bay. The advance was restrained by last year's shore ice up to 2 meters thick which drastically changes the direction of the wind.

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*A story of heroic endurance soon to be an NBC mini-series.

The ice breaker had to do a lot of work. But they got through and then cast anchor at the outside roadstead of Novyy Port.

Having taken the relay race from the sailors, the river workers of the Irtysh steamship company in a short period under complicated conditions worked five shifts, having unloaded onto barges about 20,000 T of pipe. There remains a total of over 20,000 T of large diameter pipe to ship from the ports of West Europe to the region of Novyy Port in the 1982 navigational year. This is more than 300 km of the main gas pipeline.

When our helicopter made the final circle above the region of unloading, "Dmitriy Donskoy" was ready for a new trip. The silhouette of "Komsomol'tsa Estonii" appeared on the horizon, this was the first transport from the second caravan. These ships are given good marks everywhere.

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USSR REPORT

ENERGY

No. 121

CONTENTS

ELECTRIC POWER

Construction Problems, Progress at Nuclear Plants Examined
(STROITEL'NAYA GAZETA, 9 Jul 82) 1

Construction Progress at Azerbaijan GRES Reported
(A. Gamedov; VYSHKA, 8 Aug 82) 6

Use of Small Hydropower Plants Urged
(M. Syroyezhin; LENINGRADSKAYA PRAVDA, 28 Jul 82) 8

Use of Fuel Cells in Power Generating Described
(Yu. Chirkov; SOTSIALISTICHESKAYA INDUSTRIYA, 19 Aug 82) 10

Greater Role for Heat Pumps in Georgian Power Urged
(Vakhtang Gomelauri; ZARYA VOSTOKA, 17 Jul 82) 13

Briefs

New Construction Crane 16
Georgian Power Construction 16
Angara Heating Line 16
New Hydropower Unit 17
Maynskaya GES Research 17
Kharanor GRES Construction 17
Perm GRES Construction 17
Dnestr GES Construction 17
Papanskiy Hydropower Project 18
Caucasus Power Line 18
Papanskiy Construction Progress 18
Sulak Power Development 18
Magadan Power Line 19
Nizhnekamskaya GES Construction 19
Kola AES Construction 20
Baypazin GES Construction 20

Portable Thunder Alarm 20
Spandaryan GES Construction 20
New Research Reactor 20
Far Eastern Power 21
Karakum Construction Problems 21
Slow GRES Construction 22
New Power Sources 22
Wind-Powered Equipment 23
Turbine Modernization Proposals 23
Azerbaijan Power Output 23
Slow Nuclear Construction 24
Greater Turbine Efficiency 24

FUELS

Six-Month Coal Production Report Given
(P. Valentinov; EKONOMICHESKAYA GAZETA, Jul 82) 26

Moscow Coal Basin Progress Outlined
(Ya. Chukseyev, M. Morozov; EKONOMICHESKAYA GAZETA, Jul 82) 28

Chelyabinskugol' Responds To Criticism With Improvements
(SOTSIALISTICHESKAYA INDUSTRIYA, 16 Jul 82) 30

Improvements Outlined for KATEK
(SOTSIALISTICHESKAYA INDUSTRIYA, 7 Aug 82) 32

PIPELINES

New Gas Turbines for Urengoy-Pomary-Uzhgorod Trunkline
(SOTSIALISTICHESKAYA INDUSTRIYA, 12 Oct 82) 35

Dispatcher Discusses Unified System of Gas Supply
(A. Vorotynsev Interview; SOVETSKAYA KIRGIZIYA, 19 Aug 82) 36

Volga-Vyatka Pipeline Extends Further
(U. Bogdalov; SOTSIALISTICHESKAYA INDUSTRIYA, 3 Aug 82). 38

Despite Difficulties, Vyksa Plant Produces Multilayer Pipes
(V. Noskov; SOTSIALISTICHESKAYA INDUSTRIYA, 21 Aug 82) . 40

River Crossings of Mozdok-Kazi-Magomed Pipeline Described
(L. Aleynik; SOTSIALISTICHESKAYA INDUSTRIYA, 15 Aug 82). 42

Ural Turbomotor Plant Ships Pipeline Equipment
(IZVESTIYA, 25 Aug 82) 44

AUCCTU Coordination Council Examines Results of Worker's Relay Race
(V. Kapel'kin; TRUD, 20 Jul 82) 47

Pipeline Construction Progress Reported From Kursk Oblast
(N. Savchenko, V. Pisarchik; KOMSOMOL'SKAYA PRAVDA, 15 Aug 82) 52

Synopses of Articles in 'Construction of Pipelines', April 1982
(STROITEL'STVO TRUBOPROVODOV, Apr 82) 54

Synopses of Articles in 'Construction of Pipelines', May 1982
(STROITEL'STVO TRUBOPROVODOV, May 82) 58

Synopses of Articles in 'Construction of Pipeline', July 1982
(STROITEL'STVO TRUBOPROVODOV, Jul 82) 61

CONSTRUCTION PROBLEMS, PROGRESS AT NUCLEAR PLANTS EXAMINED

Moscow STROITEL'NAYA GAZETA in Russian 9 Jul 82 p 1

[Construction report on the Balakov and Zaporozhye nuclear power plants: "The Aim of the Competition is to Repeat Experience"]

[Text] The socialist competition between the construction workers of the Balakov and Zaporozhye AES [nuclear power plant] is bringing tangible results. On this level the Balakov workers are gaining particularly. The Zaporozhye workers began building the plant significantly earlier and of course it is easire for those following along the beaten path.

It is no accident that the construction and installation workers at the Balakov AES, if their work is compared with the same period of last year at the Zaporozhye AES, are ahead of the Ukrainians. This is a natural result of the competition among the collectives which developed in honor of the 60th anniversary of the USSR. The construction workers are constantly exchanging advanced experience, technical specifications and information and all of this helps them work more efficiently.

At the same time, the reserves for such advantageous cooperation are not completely being utilized. Thus, the Balakov workers for some reason did not adopt the experience of the Zaporozhye workers in rapidly creating their own construction industry base, a combine for special structural elements. A delay in its completion date could doom construction directly at the AES also to a delay.

Having sponsored construction at these two major nuclear power projects, we asked Zaporozhye AES workers to share their experience on the newspaper's pages in building such an enterprise with their partners.

But first let us start with a report from Balakov.

Turned into a Slow Project

[Article by the stringer I. Taran]

Vehicles loaded with concrete, preassembled structural elements and reinforcing leave in a constant flow from the piers of the large concrete plant at

Saratovgesstroy [Saratov GES Construction Administration] for the Balakov AES. But it is becoming harder and harder for the veteran to handle these orders. Actually for a long time it has been operating at the limit while the pace at the major nuclear construction project has been constantly growing. One must also not overlook the fact that the equipment at the concrete plant is old and worn out and is not designed to produce elements and parts of the class required by the AES. According to the original plan these were to be produced by a combine for special construction elements, or, as it is sometimes called, the nuclear construction combine.

This unique enterprise in a year will produce 30,000 m^3 of reinforced prefabricated concrete and more than 23,000 tons of steel structural elements, 10,000 tons of reinforcing and more than 1,000 m^2 of special slabs.

But all of this, unfortunately, is still in the future. Over the 2½ years which have passed since the start of construction on the combine, a little more than a quarter of the funds needed for completing it have been used.

Here a significant portion of the blame lies with the designers who systematically failed to meet the dates for providing technical specifications. The general designer, the Odessa affiliate of Orgenergostroy [All-Union Institute for the Designing and Organization of Power Construction] in addition has been greatly delayed in determining the facilities of the combine which are to be completed first.

If one judges from the figures, at present the situation at the construction site has taken a change for the better. The general contractor, the Khimstroy [Chemical Construction] Administration of Saratovgesstroy, overfulfilled the plan for the first quarter and as a whole more has been done on the combine than was planned. Nevertheless, this is less than 10 percent of the annual plan and the construction workers have adopted a clearly understated quota.

The installations to be completed first include the reinforcing shop with a capacity of 10,000 tons of pieces a year and the molding shop designed for 8,000 m^3 of prefabricated reinforced concrete. These should be completed in the fourth quarter.

Again the designers have failed. At the end of May they still lacked the complete technical documents for 2.8 million rubles of work. The time has already arrived for installing the nonstandardized equipment. There are 500 units of it but it has not even been ordered, for the designers up to now have not provided the necessary documents.

It was necessary to halt construction in the molding shop. The Donets affiliate was late in submitting the working documents for the foundations under the production equipment.

The first power unit of the Balakov AES should be in operation in 1984. Hence, even now the construction pace must be sharply increased.

[Editorial comment]

The collectives from the subdivisions at the construction administration of the Zaparozhye AES have promised to complete the first power unit of the plant's second stage ahead of time, in 1983. As the course of the work has shown, they are keeping their word.

One of the components for success at Zaporozhye was the completion in 1981 of the first stage of an experimental plant for special structural elements, the sole enterprise of this sort in our nation. Now its collective produces in a year 12,000 tons of special reinforced concrete elements, 10,000 tons of reinforcing elements and 800 tons of inserts. The products from the plant have made it possible to more clearly organize material and technical supply for building the AES and to introduce an across-the-board brigade contract.

The second stage of the plant is actively being built at Energodar. With its completion and upon reaching designed capacity at the enterprise, the labor of its thousand workers will equal the labor of 3,500 persons at the construction site.

Balakhov must repeat and, if possible, add to the experience in developing the construction industry base. For this, their partners in the competition recommend the following.

1. To Concentrate Resources

[By A. Kocherga, chief engineer of the Construction Administration of the Zaporozhye AES]

Even before starting work on the first power unit in the second stage of the Zaporozhye AES, a decision was taken to rapidly erect an experimental plant for special structural materials. For this reason, even at the expense of a temporary harming of basic production, here we focused the basis material, technical and labor resources and here also we began to introduce initially the simple brigade contract and later on the assembly line-complete brigade contract.

What advantages did we gain?

First of all, of course, the accelerated completion of the first stage provided us with a secure rear as now we did not depend upon the suppliers. But, in addition, we actually tested out new methods for organizing labor and these we later, having improved them, employed in building the AES itself.

Our advice to the Balakov workers is to pay more attention to the construction industry base. If it can be so put, the efficient operation of the construction workers at the basic project, the power unit of the AES, will depend upon its workability. We chose precisely such a path.

2. Straighten Out the Designs

[By A. Podgurskiy, chief engineer of the Experimental Plant for Special Structural Elements]

It often happens that a plant is built and then the production processes are worked on for years in order to bring it up to designed capacity. From the very outset we began working in close contact with the designers. The aim was to organize production in such a manner that the basic labor intensive installation operations would be carried out at the plant. For example, we set out to increase the size of the preinstallation elements. While previously, for example, the cylindrical portion of a power unit was made up of many parts, requiring the setting up of thousands of anchor bars, cross and lateral trusses and other parts directly at the site, now all of this is done at the plant. The weight of the unit produced here has risen from 30 tons up to 100 and it can be installed at the site in 12 lifts rather than 98.

Incidentally, I would caution the Balakov workers against using gas torches of the Mikron and Dnepr type in preparing metal edges. Although the designers have proposed them, this equipment does not conform to the technical conditions involved in this operation for the AES. Much more effective and dependable is an edge-planing machine which can handle worked surfaces up to 14 linear meters long.

In addition to close contact with the designers which can help avoid reworking and adjustments at the start of operating the plant, even now it is essential to train personnel for it. Here we are ready to help our partners in the competition. In particular, the workers of the future Balakov Combine even now could undergo practical training at our plant.

3. Let us Compare Forces

[By I. Bashin, electrician from the Experimental Plant for Special Structural Elements]

As is known, both our projects are competing with one another. Contracts for a social competition on both sides have been concluded by the brigades of V. Churilov, N. Derkach, N. Perederiya, N. Shugurin, V. Menzhinskiy and M. Yukhnov and by the Komsomol collectives of I. Kachurovskiy and V. Akel'yev.

But we, the plant workers, have been "dropped out" of this competition. On the one hand, our plant is still young while at Balakov construction has not even been completed. But even now we have definite experience and the collective is being organized at Balakov. It, like we, will endeavor to make a contribution to the overall efforts of the power construction workers and to complete power capacity ahead of time. Here are grounds for competition. It would be a competition when someone merely overtakes someone else but rather a truly socialist one with the exchanging of experience, the transfer of skill and mutual aid. Why don't the Balakov workers visit us, become familiar with our approach to completing production capacity, to improving production methods and overcoming arising difficulties. Then, in starting up the plant, they could avoid and not repeat our miskakes and failings. Hence I say: Let us compete.

[From the Industrial Construction Department]

The first power unit at the Balakov AES is to be in operation in 1984. The start on construction has seemingly not been bad. Obviously one could feel that the Balakov workers were following the path beaten by the Zaporozhye workers and were skillfully employing their experience. But now, when the time has come to utilize special elements at the project, more and more often there are failures here.

For this reason, the persons involved in building the Balakov AES must listen to the recommendations of their colleagues from the Ukraine. Of course, they must not be satisfied by just those materials which we are publishing today but in actuality, as the electrician N. Bashin proposes, they must go to Energodar, become specifically familiar with the experience acquired here and establish permanent creative ties.

Certainly the main purpose of the competition is not merely a labor rivalry but rather specific mutual aid, the repetition and adding to of experience acquired by the partners.

As a whole even now one can confidently say that the competition between the AES construction workers of the two fraternal republics, in being held during the year of the 60th anniversary of the formation of the USSR, will help them to successfully carry out the responsible tasks.

PHOTO CAPTION

1. The construction workers of the Zaporozhye AES, in worthily celebrating the 60th anniversary of the formation of the USSR, have widely developed a socialist competition. They have resolved to complete the annual construction program for 1982 by 15 November and to begin assembly for the production equipment for the first power unit in the reactor division, 3 months early.

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ELECTRIC POWER

CONSTRUCTION PROGRESS AT AZERBAIJAN GRES REPORTED

Baku VYSHKA in Russian 6 Aug 82 p 2

[Article by A. Gamedov: "Signs of Growth"]

[Text] Probably no other construction project in the republic has such expressive nicknames as the Azerbaijan GRES. The largest in the Transcaucasus, the power flagship and a testing range for new equipment--all these meaningful and greatly obliging words determine its great economic and social significance.

As its next power units are put into operation, probably new definitions will be found. We feel this is probably inescapable because even its first power unit put into operation last year caused excitement. Each day it generates up to 7 million kilowatt hours of electric power.

There will be four such units. At present, the second is being built. The same high pace has been set in the work as last year. And such an obligation is a responsible one, that is, to complete the unit 3 months ahead of time.

This date is very tough if one takes into account the fewer number of workers, engineers and technicians building the GRES in comparison with last year. But they have a dependable support in the acquired experience. They also have the inspiration which was caused in them by the decisions of the May (1982) Plenum of the CPSU Central Committee aimed at a further rise in the prosperity of the Soviet people. And they are well aware that the implementation of the Food Program will largely depend upon the availability of energy resources. The construction workers are united by one specific aim of putting the second unit into operation at the beginning of October. It is a difficult task. Professionalism, organization and a willingness to search help in carrying it out. The construction workers fulfilled the 7-month quota by 120 percent.

Many leading brigades have developed at the project. One of the Komsomol-youth brigades is headed by the communist Fizuli Mamedov. From his brigade derives the speed-up which can be seen among the construction workers. It set the schedule for building the foundations under the second power unit 6 weeks ahead.

The concreteness and preciseness of the set quota, the clear utilization of equipment in carrying out labor intensive operations, coordination in the actions of the teams and interchangeability--these are the principles which have been followed by the brigade leader F. Mamedov. The camera "caught" him at the moment when he was giving the next task [the photograph is not reproduced here]. To his left stand the brigade members, the installation worker Yaver Dzhabarov, the carpenter Gasan Mansimov and the driller Razmik Avakyan.

Construction has been completed on Azerbaijan's tallest 330-m smokestack. Here the brigades from the Mingechaur section of the Moscow Spetszhelezobetonstroy [Special Reinforced Concrete Construction] Trust distinguished themselves. They have passed on the baton to the installation collective from the Stavropol administration of the Gidrosantekhmontazh [Hydraulic Sanitation-Technical Installation] Trust. They are beginning the giant stack on the inside.

The boiler for the second power unit is being installed by brigades from the Mingechaur administration of the Kavkazenergomontazh [Caucasus Power Installation] Trust.

One of them is headed by the site's veteran A. Aliyev. Initially, as an installation worker from his trust, he worked in Ali-Bayramly, Sumgait, Stavropol, Central Asia and abroad. The Azerbaijan GRES is a project with a future. His stop has been a long one here. He moved his family from Baku to Mingechaur, he was given a good apartment and his children are studying in school. A. Aliyev, for participating in the construction of the GRES, has been awarded the Order of the Red Banner. The distinguished brigade leader has been elected a deputy of the Mingechaur City soviet. The leading construction project has also set an example in solving social problems and in ensuring the health of the workers.

The Azerbaijan GRES is being built comprehensively and behind the front line, the rear in the form of public amenities and works is making equally great progress. On the right bank of the Kura, a town of power construction workers has grown up. It has modern housing with all conveniences.

10272
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USE OF SMALL HYDROPOWER PLANTS URGED

Leningrad LENINGRADSKAYA PRAVDA in Russian 28 Jul 82 p 2

[Article by Candidate of Technical Sciences M. Syroyezhin: "The Energy of Small Rivers"]

[Text] Probably at present it would be impossible to find a national economic sector where the specialists in it are not thinking about what contribution they could make to carrying out the decisions of the May Plenum of the CPSU Central Committee and the Food Program adopted by it. Along with everyone, we, the power workers, as well have begun to carefully analyze the existing reserves closely tied to the development of the agroindustrial complex. We are confronted with the clear task of increasing the power-to-labor ratio in agriculture, bringing electric power output for the countryside in 1990 up to 210-236 billion kilowatt hours. The traditional resources are clearly insufficient for carrying it out.

In addition to the Volga, the Yenisey, Angara and other large water arteries, our nation has 150,000 small rivers, each of which possesses a definite energy resource. For this reason, it is no accident that among the important economic tasks the 26th CPSU Congress posed the task of more fully utilizing the hydropower resources of the small rivers.

I recall that even the GOELRO [State Commission for the Electrification of Russia] Plant considered around 40,000 hydropower units with an average capacity of 13 hoursepower and operating on small rivers. At that time they provided a great benefit. During the years of the first five-year plans, simultaneously with the erecting of large power plants, small GES were also built and in the 1950's, for example, their number approached 7,000.

However, later on, in line with the development of the power systems, the branching out of the power transmission lines and the significant increase in the efficiency of the large plants, many of the small GES ceased to exist. Operating expenditures were too high at them and it was not advantageous to retain a large staff here.

Since then, much has changed and primarily the scientific and technical level of Soviet power has risen. The present-day GES possess a high degree of automation. This circumstance now makes it possible to boldly pose the question of resurrecting the network of small GES considering that they could operate under automatic conditions.

A strong argument in favor of such plants is the fact that they could be erected from standardized and hence very economic structural elements and equipment delivered factory-ready to the spot.

First of all, of course, it is essential to use the thousands of mothballed plants which survive throughout the nation. According to the preliminary data of specialists from Lengidroproyekt [?Leningrad Design Institute for Hydropower Plants], in the USSR Northwest alone 222 former hydropower installations have been counted, including 38 in Leningrad Oblast. The condition of the Leningrad plants can be seen from the fact that only from 7 of them have the basic installations such as the dams and spillways been destroyed. This means that the reconstruction work would not require large amounts of money.

According to preliminary estimates made by specialists from the Sel'energoproyekt [Rural Power Design] Institute, the average cost of 1 kilowatt hour from such plants would be 1.2-1.65 kopeck. That is, it would be (considering the money spent on engineering structures and automation) not higher than what is presently characteristic for the medium-sized GES, for example, in the Central Power System. Because of this an opportunity will appear to build them from local financing sources, without centralized capital investments. A small GES will, as they say, be within the reach of even a medium-income kolkhoz or sovkhoz and will bring real benefit.

We might recall what is now being used in the countryside as an emergency reserve source of electric power. A diesel or driver, as the people say. For most of the time it sits idle under lock and key. Only when the centralized power supply shuts off or when very urgent situations arise at certain installations (for example, livestock farms) is the lock removed and the diesel "started up." It is more than obvious that its efficiency is extremely low.

We feel that a small GES could be used as such an emergency power source. In the event of necessity it would be switched only to the installations requiring an uninterrupted power supply but on ordinary days it would also operate! An elementary switch would make it possible to have this plant be a universal one.

At present, specialists from Lengidroproyekt are creating a general plan for the development of the nation's power resources. Research on the reserves of the small rivers has become one of the areas of this work. Naturally, this work is rather labor-intensive (even for our oblast) and, in our view, it would be advisable to involve additional forces in it such as Lengiprovodkhoz [?Leningrad Design Institute for Land Reclamation and Water Resources] which, incidentally, in one way or another later on must take part in detailing the design ideas of Sel'energoproyekt. Secondly, we must move from individual plans to standard ones, that is, to the standard designing of automatically operating power units and standard designing of equipment for the integrated water developments and the GES.

10272
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USE OF FUEL CELLS IN POWER GENERATING DESCRIBED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 19 Aug 82 p 2

[Article by Doctor of Chemical Sciences Yu. Chirkov: "The Heat of Cold Burning"]

[Text] In front of me was a diagram of a power plant. At first glance it was the most ordinary with a steam generator, turbines and electric generator....

"The similarity is deceptive," said the deputy director of the State Scientific Research Energy Institute (ENIN), Doctor of Technical Sciences, Prof R. Akhmedov. "Just look: here the coal is not burned immediately, but rather goes into the gas generator as dust. In it, under the effect of oxygen and water vapor, the fuel gases are formed. Then they are used as the fuel for our power plant...."

"But what is the reason for this? Certainly much heat must be spent to convert the coal into gases. In other words, the same energy which the customers are expecting from the plant...."

"It is more than compensated by this truly unusual unit for power plants," said Rustam Berovich [Akhmedov], smiling. "This is a unit of fuel cells...."

The word "burning" scarcely permits different interpretations: both in a bonfire and in the furnace of power plants, flows of heat and high temperatures are related to it. But there is a special "cold" burning without heat and without high temperatures. For example, this occurs in a flashlight battery. And as a result we obtain the sought after electric current.

A fuel cell is essentially the same battery. But while in a battery the reserves of chemical agents are limited, in a fuel cell the fuel and oxidizing agent, for example, hydrogen and oxygen, can be continuously delivered. And immediately, without wasteful conversion into heat, electric power can be obtained.

The advantages of such a process are enormous. Just judge for yourself. In "purely" thermal power plants the efficiency averages 33.4 percent. In other words, two-thirds of the fuel secured by hard labor is simply lost in warming the atmosphere. But in a fuel cell, efficiency can reach 80-85 percent!

Electrochemical energy which is based upon "cold" burning appeared many years ago.

But at that time coal and steam still prevailed in technology. In the first appearing thermal power plants the efficiency scarcely reached 10 percent. Against this background, the advantages of fuel cells, regardless of their capriciousness and imperfection, appeared indisputable. But still power engineering followed a different path. "Big oil" arrived and this resolved many problems.

But at present oil is becoming more and more expensive and its deposits are rapidly being depleted. What can be done? Reconvert to coal, the reserves of which are sufficiently great? But concern for protecting the environment argues against such a solution.

"For this reason, we became interested in fuel cells," continued R. Akhmedov. "Due to them, an opportunity has appeared to kill three birds at once: to return to coal, to make coal-based energy sufficiently economic and at the same time ecologically clean as the electrochemical 'combustion' of hydrogen and oxygen produces only water...."

The coworkers of the ENIN worked out the plans for the unusual power plant in cooperation with researchers at the Kvant [Quantum] NPO [Scientific-Production Association], where, under the leadership of the Corresponding Member of the USSR Academy of Sciences N. Lidorenko and Doctor of Technical Sciences, Prof G. Muchnik, different variations of the fuel cells have been and are being developed.

It has turned out that even now, without waiting for the appearance of new, more advanced cells with molten and solid electrolytes, it would be possible to develop a power plant with an efficiency 5-10 percent higher than in the best TES. Here it would be possible to provide a savings of up to 20-25 percent of the fuel for each produced kilowatt hour. Also ordinary thermal engineering equipment could be employed in the thermal system of such a power plant. Also the plant could be located directly next to the consumers, even within the city limits, reducing expenditures on energy transmission and distribution.

Attempts to develop power plants based on fuel cells have also been undertaken abroad in the United States and Japan. In particular, in the plans of a plant for New York, the design of the fuel cell unit has been originally solved. Each of them is a sandwich, where two porous electrodes play the role of pieces of bread and between which is sandwiched a porous matrix saturated with a solution of phosphoric acid electrilyte. The thickness of such a "sandwich" is millimeters while the capacity is hundreds of watts. Understandably, this is too small for the operation of a power plant. For this reason, in the plans 460 electrochemical "sandwiches" have been combined into 20 modules or "columns" with a capacity of 200-500 kilowatts each.

"In the American plans, oil or natural gas is used as the fuel," stated R. Akhmedov. "For this reason, the obtained electric power will be rather expensive, on the order of 1,500 dollars per kilowatt. Such a unit is suitable for testing out the principle. But no more. We have immediately set out to use coal and 'large power' at a station with a capacity from 500 to 3,000 megawatts.

The scientists have based the plans on the main principle that the appearance of the plant should be determined by the fuel cell units as these are the most effective in the sense of converting the energy but are also still the most expensive part. Fuel cells with acid and alkali electrolytes and with melts or fusions were studied as variations. Each of them substantially altered the entire energy design of the plant.

"Unfortunately, the fuel cells still are unable to 'feed' directly on the coal," continued the scientists. "They prefer as fuel gases, particularly hydrogen. For this reason, there is a gas generator in the plan of our station. But the energy which must be consumed here we intend to virtually fully recover. How? The synthesis gas is obtained at temperatures of 1,500-1,600°. Hence, it possesses not only chemical but also great thermal energy. We want to 'put to work' a significant portion of it using steam and gas turbines. And after them the gas will be channeled into the fuel cells. This 'cascaded' method also makes it possible to obtain the desired performance of the plant...."

In the calculations, as the initial raw materials they have used the coals from the Irsha-Borodin mine near Krasnoyarsk. In the future it is a question of utilizing the brown coals from the Kansk-Achinsk Thermal Power Complex which possess a high ash content and a low heating capacity. But wherever the new type of plants begin operating, the first and possibly the most important step has been taken as the ENIN coworkers have demonstrated the fundamental possibility of developing economic power plants operating on fuel cells.

10272
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ELECTRIC POWER

GREATER ROLE FOR HEAT PUMPS IN GEORGIAN POWER URGED

Tbilisi ZARYA VOSTOKA in Russian 17 Jul 82 p 2

[Article by Vakhtang Gomelauri, chairman of the Scientific Council for Energy Problems under the Georgian Academy of Sciences and Academician of the Georgian Academy of Sciences: "The Future of Power"]

[Text] The constant broadening and strengthening of the entire power supply system is a major condition for the intensive development of the national economy, for the growth of labor productivity and for raising the standard of living of the population. The 6th Plenum of the GCP [Georgian Communist Party] Central Committee devoted exceptionally serious attention to the problems of developing the republic's energy and to the questions of improving the fuel and energy complex on the basis of the wide use of achievements in modern science and technology.

Corresponding analysis has shown that the total amount of electric power required in a comparatively large region, for example, in the entire republic, consists of a portion consumed evenly over time and a portion which shows abrupt changes over the day. Because of this the electric power system which supplies electric power for the consumers should include power plants having an opportunity of generating electric power evenly over the day and during the year as well as power plants adopted for operating with sharply changing capacity. The designated electric plants are correspondingly termed the base power plants and the power plants designed to cover the peak and semipeak (variable) power loads. Of essential significance is the circumstance that, as a rule, the base electric power comprises over 60 percent of the total amount of electric power consumed in the region. For example, according to a study by the leading scientific research, planning and design organizations, in 1990, the demand for basic and peak and semipeak electric power in Georgia will be, respectively, around 15 and 9 billion kilowatt hours.

In world power practices, the development of electric plants which cover the variable electric loads, that is, operate with sharply changing capacity, has been a difficult problems, however under the conditions of Georgia which possesses significant hydropower resources, the solution to this problem does not represent any fundamental technical difficulties. Suffice it to say that the further planned construction of large hydropower plants possessing sufficiently large reservoirs on our basic water arteries, primarily the Inguri and Rioni Rivers, can fully cover the variable electric loads in the power system both up to the end of the present century and beyond it. These GES will also be able to participate in covering the peak loads of the neighboring power systems and this will substantially help in creating normal operating conditions for the entire unified power system of the Transcaucasus. In this regard, the question of building the so-called pumped storage hydropower plant [GAES] in Georgia merits serious attention.

Over the last decade in the area of developing the Georgian power system, regardless of the starting up of the unique Inguri GES, there has been a significant lag as a consequence of which during the autumn-winter months in the republic there has been a constantly growing shortage of electric power creating serious difficulties in power supply for the consumers. The development of the shortage has been caused by the fact that since 1971, the capacity of the base power plants has virtually not been increased in the Georgian power system. Precisely because of this the above-designated shortage as a whole has occurred in base electric power. According to the studies made, in 1990, the shortage of base electric power in the Georgian power system during the period of the autumn-winter maximum of power loads will be around 5 billion kilowatt hours, that is, approximately one-half of the base electric power consumed over this period. Of essential significance is the circumstance that the designated shortage of base electric power will occur under the conditions of a shortage of base electric power in the neighboring power systems as well.

On the question of eliminating the growing shortage of base electric power in the Georgian power system, the 6th Plenum of the GCP Central Committee emphasized that the solely correct solution, and this has been demonstrated by an objective evaluation, is the construction of a major base power plant in the republic. Obviously, the solution to this problem requires the building of a large-capacity TES or AES in Georgia and the advantage, from the viewpoint of a cleaner source of electric power which does not pollute the environment is on the side of the AES.

This viewpoint is shared by a majority of the leading power engineers and physicists in the republic as well as specialists from other areas.

The 6th Plenum of the GCP Central Committee devoted attention to the existing lag in the area of introducing heat pumps the wide use of which undoubtedly will make it possible to have a substantial contribution to improving the fuel and energy complex in the republic.

Among the various low-temperature production processes, of the greatest interest under Georgian conditions is the use of heat pumps in the tea industry which is here one of the leading national economic sectors. As is known, the tea factories each year consume over 100,000 tons of high-grade mazut. This entire quantity of liquid fuel is consumed on heating atmospheric air delivered to the tea drying and tea curing units to 50-100° C, after which this moisture-saturated air at a temperature of 30-60° C, along with the heat contained in it is released into the atmosphere. The recovery of this heat using a heat pump would completely exclude the need to burn mazut at the tea factories. The use of heat pumps requires the expenditure of electric power, however, the total capacity needed for all the heat pumps at the republic tea factories is a minimum of 180,000 kilowatts and this is less than the capacity of just one unit at the Inguri GES. Here, since the tea factories do not operate during the low water period, that is, from November through April, the heat pumps of these factories, making it possible to save 100,000 tons of high-grade liquid fuel annually, will at the same time be a regulating consumer for the surplus seasonal electric power which is so essential for the Georgian power system. One should also note that the heat pumps, in contrast to the uneconomic and primitive mazut burners, can ensure the precise observance of optimum air heating temperatures as provided by the current production standards. These make it possible to maintain a comfortable air temperature in the factory shops and virtually completely exclude the danger of the outbreak of fires here.

Also important is the fact that the conversion of a tea factory to heat-pump heat supply envisages the setting up of cold storage lockers at the factory and these would be used for the green tea leaf delivered during the peak harvest period. The locker, in utilizing the waste cold from the heat pump, would make it possible, so to speak, to "smooth out" the peak loads. Due to this factory productivity could be increased by 25-30 percent. Thus, the conversion of three or four tea factories to heat-pump heat supply would be the equivalent of building a new factory.

Regardless of the designated advantages and the presence of design and estimate documents which have been excellently executed by Gruzgipropishcheprom [?Georgian Design Institute for the Food Industry], the prototype heat pump unit still has not been completed at the Samtredia Tea Factory. Incidentally, the plans envisage the installation at the plant of serially-produced Soviet-made refrigeration compressors which operate on cooling agents produced in our nation. Thus, the directive instructions and decisions of the superior Georgian bodies on the given question remain unfulfilled, and in particular, the points which envisage the creation of the prototype heat pump units. Designed by Gruzgiprogorstroy [?Georgian Design Institute for Urban Construction] and designed for heat supply at resort facilities on the Black Sea coast and in the town of Tskhaltubo. As the reasons which have caused the delay in converting to heat-pump heat supply, for example, at the Samtredia Tea Factory, usually such arguments are given as the difficulty of operating the refrigeration compressors, the lack of refrigeration specialists and so forth. Along with this it is known that the refrigeration compressors are being successfully operated at many republic enterprises and at Samtredia itself at the non-alcoholic beverages plant. It is also known that refrigeration compressor operators can be trained on the spot within a 3-month period by Orgpishcheprom [?Organization for the Scientific Organization of Labor, Introduction of New Equipment and Advanced Experience for the Food Industry]. As for refrigeration engineers, each year they are graduated by the mechanics and machine building faculty of the Georgian Polytechnical Institute imeni V. I. Lenin. In this regard of essential significance is also the fact that the creation in the republic of heat-pump heat supply systems has been provided with scientific and technical leadership from the sectorial laboratory for heat pump units organized under the Georgian Polytechnical Institute imeni V. I. Lenin.

There is no doubt that the decisions of the 6th Plenum of the GCP Central Committee will play a crucial role in optimizing the structure of the Georgian power system and further improving the republic's fuel and energy complex.

10272
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BRIEFS

NEW CONSTRUCTION CRANE--The method of large-unit installation is helping to increase labor productivity and shorten construction time. In building the AES, the introduction of this method is being aided by a new gantry crane with a lifting capacity of 200 tons, a span of 80 m and a lifting height of 76 m. This crane was developed by specialists from the Kharkov affiliate of the Energomontazhproyekt [?Power Installation Design] Institute. This lift will be used for the first time in installing the power units of the Balakov AES. [By G. Genshaft, engineer-economist from Kharkov] [Text] [Kiev PRAVDA UKRAINY in Russian 17 Jun 82 p 2] 10272

GEORGIAN POWER CONSTRUCTION--Regardless of the floods and the heavy torrential rains with hail, the construction workers on the Khudonskaya GES are ahead of schedule. Yesterday they began cutting the diversion tunnel for shifting the Inguri River to its new channel. Its construction will make it possible to begin erecting the arch dam 190 m tall. The project is a complicated one and for this reason powerful equipment has been brought to the site and experienced hydropower construction workers have arrived here. The basic work has been assigned to the leading brigade of K. Markhuliya. It has been aided in the experience acquired in cutting the 15-km penstock at the Inguri GES. In the collective everyone has mastered related professions and this will make it possible to significantly accelerate the cutting and raise labor productivity. The Khudonskaya GES with a capacity of 750,000 kilowatts each year will generate 1.7 billion kilowatt hours of electric power. The hydropower plant will accelerate the development of the productive forces in Svanetia. [By TASS from Mestia, Georgia] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 9 Jul 82 p 1] 10272

ANGARA HEATING LINE--Construction has been completed on a thermal pipeline across the Angara. Of the 13 km of large-diameter thermal network, more than 1.5 km runs across the river. Now the hot water from the Novo-Irkutskaya TETs will be delivered to the houses of inhabitants on the right-bank rayons of the oblast center and will make it possible to eliminate hundreds of small boiler installations. Recently the act was signed accepting the line for operation. Now the construction workers are preparing to build a second stage for the line. It will supply water to Akademgorodok on the left bank of the Angara. [By L. Babin from Irkutsk] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 1 Aug 82 p 1] 10272

NEW HYDROPOWER UNIT--Naberzhnyye Chelny (Tatar ASSR). The 10th unit of the Nizhnekamskaya GES has gone on line. It has delivered current to the nation's unified power system. The high level of plant prefabrication for the assemblies and the progressive method of large-modular assembly made it possible for the installation workers from the Spetsgidroenergomontazh [Special Hydropower Installation] Trust carry out the work under a concentrated schedule. In endeavoring to quickly achieve the final result, the specialized brigade of S. Slabenko, having effectively completed the assembly of the stator, helped rivals in the competition in installing another unit. The construction of the GES is continuing. [Text] [Yerevan KOMMUNIST in Russian 20 Jul 82 p 1] 10272

MAYNSKAYA GES RESEARCH--The Institute for Hydraulic Engineering imeni B. Ye. Vedeneyev is continuing research on the development of the Maynskaya GES. This power plant is a satellite of the Sayano-Shushenskaya giant power installation. It will have a capacity of just 320,000 kilowatts. Its basic purpose is to control the level of the Yenisey. One of the basic parts of the dam, the spillway, is being tested on a vacuum-cavitation stand at the integrated hydraulics laboratory. The recommendations by the scientists will provide an opportunity for the designers and builders to create a maximum dependable structure. In the photograph (not reproduced): Technician N. P. Tokmakova and Engineer I. Yu. Gorshenina watch the testing of the model of the spillway at the Maynskaya GES. [Text] [Leningrad LENINGRADSKAYA PRAVDA in Russian 14 Jul 82 p 1] 10272

KHARANOR GRES CONSTRUCTION--A Komsomol-youth brigade of carpenter concrete workers of Aleksandr Burdinskiy has appealed to all the young construction workers of the Kharanor GRES and the town of Yasnogorsk being built together with it to develop a socialist competition to complete the first units of the power plant in 1984. This patriotic initiative was approved by an open Komsomol meeting at the site and by the Chita CPSU obkom. The results of the competition are to be given for three categories of participants: among the equipment operators, the workers of the general construction specialties and engineer-technical personnel. The young Yasnogorsk workers have marked the start of the competition by laying out the Park imeni XIX s"yezd VLKSM [Komsomol]. They have set the task of completing construction-installation work valued at 14 million rubles this year for ensuring the starting-up of the first units at the designated date and in the future year will double the amount of this work. [By A. Prigodich] [Text] [Moscow STROITEL'NAYA GAZETA in Russian 11 Jul 82 p 2] 10272

PERM GRES CONSTRUCTION--Near the town of Dobryanka on the Kama River, the nation's largest Perm GRES is being built. A collective of construction workers from the Permgresstroy [Perm GRES Construction] Administration is working intensely to build the basic installations. The first power units at the plant should be on-line by the end of next year. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 16 Jul 82 p 1] 10272

DNESTR GES CONSTRUCTION--The operating two units of the Dnestr GES have produced the first quarter-billion kilowatt hours of electric power. The power workers dedicated their success to the 60th anniversary of the formation of the USSR. The installation workers are preparing to start up the third unit. Work on the fourth unit is also ahead of schedule. Here they are carrying out the responsible operation of lowering a multi-ton impeller into the prepared crater. [By V. Volodin from Chernovtsy Oblast] [Text] [Moscow IZVESTIYA in Russian 30 Jul 82 p 2] 10272

PAPANSKIY HYDROPOWER PROJECT--In the construction of the Papanskiy Integrated Hydropower Development work has started on filling the second stage of the dam. Having joined the competition to properly celebrate the 60th anniversary of the USSR, the collective of the PMK [mobile mechanized colume] from the Naryngidroenergostroy [Naryn Hydropower Construction] Administration annually [sic] lays around 3,000 m^3 of rock in the dam's body, and this is one-third above the norm. The competition between the related excavator, transport and bulldozer operators has been organized according to the "Worker Relay" principle. Having concluded a contract on labor collaboration, they have made the end result the chief indicator of their work. By the nation's jubilee, they plan to complete the second stage of the dam, bringing its height up to 80 m. Along with the earth fill, the tower of the water outlet is rapidly growing, and the transport tunnel has been cut a half kilometer into the rock. [Text] [Moscow STROITEL'NAYA GAZETA in Russian 11 Jul 82 p 2] 10272

CAUCASUS POWER LINE--A 200-km 500-kilovolt power transmission line is now in operation. It runs between the Stavropol GRES and the Central Substation in Apsheronskiy Rayon of Krasnodar Kray. This line will ensure dependable power supply for the industrial centers and agricultural regions of the Black Sea area. A 500-kilovolt power transmission line is also being built from the Stavropol GRES across the glaciers of the Main Caucasus Range and it will connect this thermal plant with the Inguri GES. By the end of the summer, there are plans to complete the installation of supports on the most difficult section of the route, the Makhar Pass, which is almost 3,000 m above sea level. [Text] [Moscow PRAVDA 12 Aug 82 p 3] 10272

PAPANSKIY CONSTRUCTION PROGRESS--The filling of the second stage of the dam has started in the construction of the Papanskiy integrated power development in Kirghizia. Having joined the competition to properly celebrate the 60th anniversary of the USSR, the collective of the PMK from the Naryngidroenergostroy Administration each day is laying around 3,000 m^3 of rock in the dam's body and this is one-third above the norm. In the photograph [not reproduced] powerful excavators, bulldozers and dump trucks are at work building the dam. [Text] [Moscow STROITEL'NAYA GAZETA in Russian 25 Jul 82 p 3] 10272

SULAK POWER DEVELOPMENT--Scores of rivers carry their waters from the sparkling icy caps of the Main Caucasus Range across the valleys of Dagestan to the Caspian. The mightiest and probably the most beautiful of them is the Sulak. Since antiquity it has been called a dragon river. Its enormous hydropower potential was wasted. Only under Soviet power did man begin to conquer the Sulak and its tributaries. The first to be built was the small Gerbegil GES and then the Chir"yurt. But the largest in the series of plants will be the Chirkey. It has already been put into permanent industrial operation. The plant is built in a narrow and deep mountain gorge, in areas where high seismic activity has been noted. The basic structures have been designed on a high scientific and technical level. A collective of the developers and builders have been proposed for prizes of our nation's government. "The entire nation erected the plant," related the brigade leader of the multi-specialty brigade of Chirkeygesstroy [Chirkey GES Construction], Omar Aliyev. "Representatives from virtually all the republics, krays and oblasts arrived in Dagestan. On the banks of the Sulak, an international working family developed and grew stronger through joint labor. Let me give just the following fact. During the time of the dam's construction, more than 3,000 workers and technicians were trained and they were the sons and daughters of many nationalities of Dagestan." No, at present the Sulak gives not only electricity. The Chirkey integrated water project makes it possible to comprehensively solve the problems of energy, irrigation and water supply for the republic's towns and settlements. Recently construction was completed on the 75-km irrigation canal imeni Oktyabr'skaya Revolyutsiya and the Verkhne-Khasav"yurt Canal has been cut. At present 300,000 hectares of arid lands are being irrigated in the mountainous region. In addition to the plant itself, the hydropower construction workers have built and are continuing to build industrial enterprises, cultural-service facilities and housing in the republic's towns and villages. For example, the fine settlement of Dubki has grown up. Roads, large plants and a gas pipeline have been built. [By PRAVDA correspondent V. Artemenko from Dagestan] [Text] [Moscow PRAVDA in Russian 17 Jul 82 p 1] 10272

MAGADAN POWER LINE--The openwork supports of a new 220-kilovolt power transmission line have marched across the Tayga and Hillocks. This power bridge over the Tayga stretching almost 300 km, links the Arkagala GRES and then the Kolyma GRES with the "Pole of Cold," Oymyakonskiy Rayon in Yakutia. This will make it possible to improve power supply for the ore-mining industry of Magadan Oblast and the Yakutsk ASSR. The construction workers of the new power transmission line must quickly cross scores of northern rivers, the spurs of the Cherskiy Range and swamps. At present, more than 100 metal supports have been placed on concrete foundations and the wires have been strung on the first 20-km section of the difficult route. Aviators are helping the installation workers storm the mountain passes. MI-7 helicopters are being used to deliver the multi-ton supports to areas inaccessible for motor transport, that is, on the slopes of the steep mud cones and the abrupt river banks. The building of the new high-voltage line is a component part in the comprehensive program for developing the productive forces of Magadan Oblast in this five-year plan. In particular, there are plans to more fully utilize the energy from the northern rivers in the Kolyma and Chukotka, as well as create new energy capacity on the basis of the local coal deposits. This will make it possible to sharply reduce the number of small departmental power plants of which there are more than a thousand now on the oblast's territory. [By G. Krasnogor, TASS correspondent, from Magadan] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 15 May 82 p 2] 10272

NIZHNEKAMSKAYA GES CONSTRUCTION--The fifth unit of the Nizhnekamsk GES has gone on line. Yesterday it began providing current for the Unified Power System of the nation. The high level of plant prefabrication for the equipment and the progressive method of large modular assembly have made it possible for the installation workers from the Spetsgidroenergomontazh Trust carry out the work under a concentrated schedule. [By TASS from Naberezhnyye Chelny] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 4 Jul 82 p 1] 10272

KOLA AES CONSTRUCTION--Murmansk Oblast. At the end of June 1982, the Kola AES will be 10 years old. Further construction of the AES is also successfully being continued. A socialist competition to properly celebrate the 60th anniversary of the formation of the USSR has been widely developed in building the next power unit. [Text] [Source not given] 10272

BAYPAZIN GES CONSTRUCTION--The site of the Baypazin GES under construction, the next plant on the Vakhsh series, has begun ahead of time to receive parts of hydropower equipment from the Kharkov Turbine Plant. Suppliers from Sverdlovsk, Zaporozhye and Krasnoyarsk have informed their distant friends in the "Worker Relay" from the Nurekgesstroy [Nurek GES Construction Administration] that they will fulfill the orders ahead of time for the nearly-completed project. [By A. Ikramov] [Text] [Source not given] 10272

PORTABLE THUNDER ALARM--A device warning of a thunderstorm danger will become a valuable assistant for construction and repair workers on power transmission lines. This unit was developed by specialists from the Scientific Research Institute for Power imeni I. G. Yes'man. The compact and portable instrument picks up the electromagnetic radiation arising with a thunder discharge at a distance up to 40 km. The unit is to go into serial production at the Azenergonaladka [Azerbaijan Power Installation] Association. Here a warning sound signal is emitted indicating that for now work on the line need not be halted and possibly the storm will pass to the side. A second signal means that the thunder is approaching while the third means that work must be halted. The device is also usable by the controllers of power transmission lines. In precisely determining the movement of thunder clouds, they can promptly shut down the lines on distant sections. [By Azerinform] [Text] [Baku VYSHKA in Russian 26 Jun 82 p 4] 10272

SPANDARYAN GES CONSTRUCTION--High in the Zangezur Mountains, Armenian hydropower construction workers are erecting the last stage of the Vorotan Hydropower Series, the Spandaryan GES. Having set the shock watch in honor of the 60th anniversary of the formation of the USSR, construction workers from the Armgidroenergostroy [Armenian Hydropower Construction] Trust are ahead of schedule in the construction-installation work. In endeavoring to complete the construction of the unique plant ahead of time, the hydropower construction workers have resolved to complete the construction of all the projects at the plant a month ahead of time. [By N. Ordinyan from Sisian] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 26 Jun 82 p 1] 10272

NEW RESEARCH REACTOR--Dubna (Moscow Oblast), 5 June (TASS). The scientists at the Joint Nuclear Research Institute [OIYaI] have received a new unit, a powerful pulse fast reactor, the IBR-2. This was announced at the session ending today of the Scientific Council of the OIYaI. This meeting was attended by physicists from 11 socialist nations which are participants of this international scientific center. The director of the OIYaI, Academician N. Bogolyubov, pointed out that the reactor has world-record parameters of neutron flows. This opens up broad opportunities for the physicists of the socialist nations to study the structure of atomic nuclei and the properties of elementary particles. [Text] [Leningrad LENINGRADSKAYA PRAVDA in Russian 6 Jun 82 p 1] 10272

FAR EASTERN POWER--Our nation is carrying out a major program for hydropower construction in the eastern regions. Recently on the Zeya River, a tributary of the Amur, a hydropower plant was put into operation with a capacity of 1.3 million kilowatts. Now, on another tributary of the Amur, the Bureya, construction is starting on a new GES. The Bureya GES is a characteristic example of construction in the Far East. Here all projects are a natural continuation of one another and the scale of each subsequent project significantly exceeds the parameters of its predecessor. This is also the case of the Bureya GES. Its six units (a total capacity of 2 million kilowatts) will produce over 7 billion kilowatt hours of electric power a year. Soon construction will start on still another GES on the Bureya, the Nizhnyaya Bureya [Lower Bureya]. In contrast to other hydropower series, the two plants on the Bureya will be built simultaneously. This is caused not only by the need of the Far Eastern Region for electric power and the advantages of a common construction base. Both hydropower plants will make maximum use of the river's resources. In receiving the overflow from the Bureya GES, the Nizhnyaya Bureya will make it possible for the first plant to operate at full capacity and will not allow flooding of surrounding settlements. The time has long passed when the starting of major construction involved many domestic inconveniences for construction workers. On the bank of the Bureya, now next to wooden huts, 5-story buildings are going up. This is the settlement for hydropower construction workers, Talakan. More than 500 plants of the nation participated in the construction of the Zeya GES. In particular, enterprises from the RSFSR delivered rolled metals, pipe, cement, turbines and hydropower generators to the project. Ukraine supplied transformers and Belorussia provided large-capacity trucks. Kazakhstan sent metal structural elements. The entire nation will also build the Bureya GES. At the start of the 12th Five-Year Plan, power from the new GES will flow into the Unified Far Eastern System of Power Transmission Lines. This will make it possible to improve power supply to the cities of Blagoveshchensk, Khabarovsk and Komsomolsk-na-Amure. One of the basic consumers of power will be the Baykal-Amur Mainline and the new enterprises built in its zone. Moreover, the dams on the Bureya will free many hundreds of thousands of hectares of fertile Far Eastern lands from flooding. [By O. Kvyaskovskiy] [Text] [Yerevan KOMMUNIST in Russian 10 Aug 82 p 1] 10272

KARAKUM CONSTRUCTION PROBLEMS--The letter by V. Prokhorov from Sverdlovsk raised the questions: "Is construction on the Karakum Canal to be continued? Are there difficulties and unsolved problems?" The article "Ever-Farther into the Karakums" (28 Aug 80) was devoted precisely to the questions which are awaiting their resolution. The replies then received from Turkmenia requested that the editors continue to monitor the course of this construction project. In particular, it was said that power transmission lines to the construction zone of the Zeid Reservoir were being put up slowly. In line with this rear request, criticism was voiced of the Minenergo [Ministry of Power and Electrification] ("Today on the Karakum River" 5 Feb 82). The Chief of the Main Production Technical Administration for Construction of the Minenergo, G. Iyevlev, informed the editors: "The 1982 plan for power supply for the zone of the Zeid Reservoir includes construction and completion of the following: a 110-kolovolt power transmission line between Zakhmet--Niyaz some 195 km long; a 110-kilovolt power transmission line between Karamet-Niyaz and Promzona some 53 km long. Control has been established over the course of construction on the power supply projects in the construction zone of the Zeid Reservoir." This is extremely necessary.

In fact, everything turns out to be not so good. While the first line is being built normally, the second has not been started at all, although they should have started long ago. This is the task of Turkmenglavenergo [Main Turkmen Power Administration]. However, it asked Glavkarakumstroy [Main Karakum Construction Administration] to help in setting up the reinforced concrete supports. The Karakum construction workers agreed although this was not their job. But so far Turkmenglavenergo has not provided a single support. It may be assumed that these finally will appear and the idled powerful electric dredges will receive their current. [Text] [Moscow PRAVDA in Russian 25 Jul 82 p 3] 10272

SLOW GRES CONSTRUCTION--Dear Editors! Twice, on 25 September 1978 ("idling") and 19 March 1979 ("the installation is being dragged out"), PRAVDA wrote about the unjustifiably delayed construction of a power plant in the settlement of Dedovichi in Pskov Oblast. We, the authors of this letter, work here and for this reason are well aware of the state of affairs. The plant has been under construction since 1970, the total volume of work is 113 million rubles but here not more than 2 million rubles are used a year. The First Deputy Minister of Power and Electrification P. Falaleyev, in replying to the criticism in the newspaper, then informed the editors that the ministry "was taking measures to strengthen the construction organization and provide it with the necessary equipment and material resources so that the first power unit would be in operation in 1981." After the criticism in PRAVDA, at a session of the collegium of the USSR Minenergo [Ministry of Power and Electrification], the course of construction at the Pskov GRES was taken up. The completion of the first power unit was planned for 1984. At present, it is obvious that this date will not be met. It is essential to complete at least 10 million rubles worth of work a year and this is 5-fold more than the achieved limit at the GRES site. In addition to this are the corrections made into the technical plans for completing the first unit, requiring 14 million rubles of additional work. Regardless of the orders, the construction project as before is poorly supplied with materials. For example, last year due to the lack of reinforcing steel, work was halted on the smokestack. For a long time there has been no work on the water system, the treatment works and the unloading facilities as there was no cement and crushed rock. People have lost confidence in success and are leaving the project. The communists have repeatedly discussed all of this at meetings and have written letters to the USSR Minenergo and the Pskov Party Obkom. But no precise answer has been received to the questions concerning the labor collective. We would like to know if things will finally get off dead center? [By V. Kuchumova, deputy secretary from the party organization of the construction administration of the Pskov GRES and I. Pavlov, chairman of the people's control group from the village of Dedovichi, Pskov Oblast] [Text] [Moscow PRAVDA in Russian 25 Aug 82 p 3] 10272

NEW POWER SOURCES--Recently, specialists have been drawn to nontraditional methods of obtaining industry. Some of them have been demonstrated at the Elektro-82 Exhibit. The Malakhit-6 electrochemical generator transforms the thermal energy formed as a result of the reaction of the oxidation of hydrogen by the oxygen in the surrounding air into electrical. It can be employed for supplying power to communications and equipment in areas remote from stationary electric power sources. The SVU-80 solar water lift is designed for water supply on pastures in the arid and desert regions of the nation. The main element of this unit is solar batteries by which the energy of solar radiation is transformed into electricity. The Sever (North) thermoelectric generator operates dependably in inaccessible and little-developed areas of the Far North, in warming the tents of reindeer herders, the huts of geologists and other living quarters. The generator operates on a liquid (kerosene or gasoline) and gaseous fuel. It receives electric power with the aid of semiconductor thermoelectric batteries by economically burning the fuel. [Prepared by A. Lupenko and V. Kharlamov] [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 29 Jul 82 p 1] 10272

WIND-POWERED EQUIPMENT--The marine meteorological station of Melkovodnaya in Tauyskaya Guba in the Sea of Okhotsk has received the first wind-driven power unit from those which are presently produced by Soviet industry. Winds are frequent in this area. In using their force, the new unit to a significant degree will replace the operation of the diesel generator and will make it possible to save fuel and energy resources which are shipped in here. The generated power should operate the radios and employed for illumination and domestic needs. The calculated capacity of the unit is 6 kilowatts. In the near future a windmill for northeasterlies will be installed by a brigade of specialists from the Kolyma Administration for Hydrometeorology and Environmental Monitoring. [By Zh. Yeremenko from Magadan] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 7 Aug 82 p 2] 10272

TURBINE MODERNIZATION PROPOSALS--The capacity of hydropower plants [GES] on mountain rivers can be significantly increased by modernizing their turbines as proposed by Kharkov scientists and production workers in collaboration with specialists from Moscow. The Plant imeni S. M. Kirov has completed the manufacturing of a set of assemblies for reequipping the first unit of the Nurek GES in Tajikistan. "As a result of experiments, an effective method has been found for reducing turbine vibration and which prevents achieving their maximum output," stated the professor at the Kharkhov Polytechnical Institute, D. Aleksopol'skiy. "A compact device has been developed which eliminates pulsations in the water current. The equipping of the turbines in Nurek with such a device is the equivalent of completing a power unit with a capacity of 300,000 kilowatts and costs scores of times less. The Ukrainian machine builders and power workers from Tajikistan have resolved to put the first of the plant's rebuilt units in operation by the 60th anniversary of the formation of the USSR. By the end of the Five-Year Plan, using an accelerated work schedule, all the plant's units will be converted. According to the calculations of specialists, turbine modernization will provide a major effect at other large GES in the south of the nation such as the Inguri in Georgia and the Chirkey in Dagestan. The new technical ideas are now being incorporated in the plans for equipment at the largest Rogun GES in Central Asia. [By TASS from Kharkov] [Text] [Moscow, IZVESTIYA in Russian 17 Aug 82 p 2] 10272

AZERBAIJAN POWER OUTPUT--The meters of the Azerbaijan GRES today recorded the output of the billionth kilowatt hour of electric power since the plant went into operation. This goal was reached a month ahead of the plan. The early starting-up of the first 300,000-kilovolt power unit has provided an opportunity, without harming the power system, to shut down obsolete and ineffective equipment at a number of other plants. At present, preparations are being accelerated to complete the second unit at the plant and the construction workers have promised to deliver it ahead of time, in October. [By TASS from Azerbaijan] [Text] [Moscow IZVESTIYA in Russian 20 Aug 82 p 1] 10272

SLOW NUCLEAR CONSTRUCTION--In front of me is a regular summary on the course of construction at the Rostov AES. At first glance, the situation seems normal. The general contractor, the Atomenergostroy [Nuclear Power Construction] Administration with its own forces is steadily using the assigned funds and is increasing the pace. Some 16 basic projects have been set apart where the human and material resources are to be concentrated. The trade union committees from the general contracting and subcontracting organizations have commenced a competition at these projects using the "worker relay" principle. A council of party organization secretaries is at work at the project. Still things are going far from scheduled. At 13 of the major projects, month after month the schedule is not adhered to and the subject quotas are not fulfilled. Thus, in May alone over 1.2 million rubles were not used. A large amount of the blame for not meeting the schedule rests on the leaders of the general contracting and subcontracting organizations who, in signing the contracts, then immediately forget about them. This is formalism in its purest form! Let us look at one of the basic projects which requires special attention. The brigade collective of I. Golubkov from the Gidrospetsstroy [Hydraulic Special Construction] Administration, in relying on the assurances of the leaders of the SMU-6 [Construction-Installation Administration] that the pilings would be sunk on time, promise to complete the piling foundation at the end of June. At this same time, in parallel the grill work was also to be done. Here there was nothing complicated as the brigade was capable of sinking 40 pilings a day. But they could not be delivered in the required number to the sight by the two leaders: the chief of the SMU-6 N. Plygunov referred to the lack of KrAZ [trucks] for transport while the chief of the motor transport administration I. Murugov asserted that there was no order for the special transport. As a result, the building of the grill work fell 24 days behind schedule. The AES construction workers, in order to eliminate the lag on the main building, in May should have completed the underground foundation work for the reactor department. But they did not. A particularly great lag was permitted by the Gidromontazh [Hydraulic Installation] Administration. The Atommash [Nuclear Machinery] Plant also did not fulfill its contractual obligations as it did not supply the project with metal cell units. The brigade leaders I. Golubkov, V. Mareyev, A. Krasnopol'skiy and V. Lazarev who put their signatures on a contract for a socialist competition within a small "worker relay," were hoping that word would conform with deed. But there was little concern for this by the organizers of the competition, the site committee of the Volgodonskenergostroy [Volgodonsk Power Construction] Trust (chairman A. Kapendyukhin) and the party committee (secretary V. Sud'in). Here the concluded contracts were filed away and the matter considered finished. The site is frequently visited by leading workers from the USSR Minenergo such as the deputy minister A. Semenov and the chief of the Glavzavodspetsstroy [Main Plant Special Construction] Association Ye. Kuz'michev. But their visits do not leave any noticeable traces. The project needs additional equipment and labor resources. These questions are not new ones and as before are waiting a resolution. [By SOTSIALISTICHESKAYA INDUSTRIYA correspondent V. Aksenov from Volgodonsk] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian, date and page unknown] 10272

GREATER TURBINE EFFICIENCY--Initially it seemed to us that with the early completion of the Nurek GES the "worker relay" would disappear at this project. But it turned out that this was not the case. Here friends in the "worker relay" also had their say and these were the operational workers who took over the plant from the construction workers. In monitoring the operation of the nine units at the plant, they reached the conclusion that due to the excellent quality of equipment manufacture and installation, the "safety factor" for the units was significantly higher than had been envisaged in the plans. Consequently, there was an opportunity to increase the load on each unit and thereby increase its capacity. This idea was passed along the chain to the construction workers and supplier plants. The chain has again gone into full operation. Having checked the observations and calculations we have reached the conclusion that the capacity of each power unit with minimum expenditures could be increased by 10-13 percent. This means 300,000 kilowatt hours of electric power a year and this is the equivalent of starting up another tenth unit at the plant. This symbolic unit is capable of providing a completely real--and sizeable savings of state funds since the additional energy will be generated on virtually the same equipment and with the same plant personnel. At present active work is underway to carry out this idea. On its path stand two main tasks: to strengthen the cooling of the front parts of the generators and eliminate vibration arising in operating the turbines at an increased load. Our friends in the competition, the Sverdlovsk and Kharkov workers, have found a dependable and economic solution to these complex engineering problems. At present, the plants are completing the preparations of the technical documents and testing is underway on models of the power units. The approximate cost of all the work to increase the output at the Nurek GES is 2 million rubles. The economic gain is over 50 million rubles annually. The Nurek power is the cheapest in our nation. With the starting up of the "tenth unit," the plant will operate just as dependably and even more economically. By this speech at a worker meeting I would like to emphasize the importance of a creative attitude toward the development and support of initiatives. [By A. Mel'nikov, chief of the Nurek Hydropower Construction Administration] [Text] [Moscow TRUD in Russian 10 Jun 82 p 1] 10272

10272
CSO: 1822/275

SIX-MONTH COAL PRODUCTION REPORT GIVEN

Moscow EKONOMICHESKAYA GAZETA in Russian No 29, Jul 82 p 4

[Article by P. Valentinov: "Six-Month Results: How the Commitments are Being Fulfilled"]

[Text] A total of 420 mining brigades in the first 6 months have extracted a thousand and more tons of coal per day. They have brought to the surface in 6 months a total of 77 million T of fuel. The number of collectives of "thousand-producers" as compared to the same period as year has increased.

In developing the movement "thousand-workers" the associations "Rostovugol'," "Gukovugol'" and "Yuzhkuzbassugol'" have achieved good results. The brigades headed by K. Markelov ("Gukovugol'") and N. Reshetnikov ("Yuzhkuzbassugol'") are confidently fulfilling the commitments adopted in the competition for extracting one billion tons of coal this year.

In the first six months, the brigade of miners V. Ignat'yev from the Donetsk mine "Krasnolimanskaya" yielded 55,000 T of coal in addition to the commitments, the brigade of V. Yelagin from the Kuznetsk mine "Oktyabr'skaya"--130,000 T, and the brigade of N. Gladkiye of "Shakhtinskaya" in Karaganda--103,000 T.

In competition for high-speed making of preparatory shafts, the brigade of drillers headed by V. Rud' (mine "Yubileynaya" in the Kuzbass) and V. Vernigorov (mine "Pavlogradskaya" in the Donbass) achieved excellent results. The first of them passed 621 m of mine shafts in addition to the commitments for 6 months, and the 2nd--276 m.

The six-month results indicate that the coal industry as a whole has improved its work. The sector for main technical-economic indicators has fulfilled the plan. In June, coal extraction rose as compared to the same month as last year by 3.7 percent, or by 2.1 million T. The assignment for shipping coking and graded coals was realized ahead of schedule.

In the last 6 months, 142 million T of coal have been extracted by the open pit method, 4.6 million T more than the first half of 1981.

The plan has been fulfilled for making preparatory shafts. The situation with preparatory operations in the Kuznetsk basin has improved. There has been an increase in the volume of stripping operations at the coal pits. It rose in the first six months by 7.3 million m^3 as compared to the same period of last year.

At the same time, there are serious shortcomings still in the work of many mines. A certain decrease has been permitted on the average load on the stoping base. Consequently, a number of large associations have sent brigades of specialist with the instruction to find out the reasons and to take efficient measures for improving the load on the stoping faces, primarily complex-mechanized.

The task of the miners is to create at the industrial enterprises, power plants, in the cities and settlements the necessary reserves of coal for the coming fall-winter period.

9035
CSO: 1822/276

FUELS

MOSCOW COAL BASIN PROGRESS OUTLINED

Moscow EKONOMICHESKAYA GAZETA in Russian No 29 Jul 82 p 17

[Article by Ya. Chukseyev and M. Morozov, mining engineers: "Podmoskovnyy Coal Basin"]

> [Text] Forty years ago, in July 1942, the Ukaz of the Presidium of the USSR Supreme Soviet awarded 343 of the best workers and mining-engineering workers of the "Moscow stokehole" orders and medals for model fulfillment of the assignment of the government to restore coal mines of Podmoskovnyy basin and fulfillment of the coal extraction plan.

After restoration of the mines the miners of Podmoskovye were set the task of reaching the level of the prewar extraction, 35,000 T per day. In September 1942 this level was already reached. The miners of Podmoskovye guaranteed continuous supply of the capital's industry and railroad transportation with fuel. In September 1943, the State Committee of Defense in its decree noted that the Podmoskovnyy basin, which was destroyed during the occupation, increased coal extraction as compared to the prewar level by 18 percent. In 1945, the Moscow basin produced over 20 million T, over 17 percent of all coal extraction in the country.

In the postwar years the Podmoskovnyy basin was converted into a powerful coal base with modern mines and open pits, plants for production and repair of mining equipment, electromechanical workshops, its own scientific research and planning-design institute. Well-built cities and settlements grew up here. The mining Podmoskovye became the motherland for creation and the pioneer of introduction of stoping mechanized complexes "Tula," other machines and mechanisms.

The coal enterprises of the basin are distinguished by a high degree of mechanization and automation of the production processes.

As a result of comprehensive mechanization and automation of the production processes, the technical-economic indicators for mine work were successfully significantly improved. Thus, at the mine "Podmoskovnaya", the largest in the basin, each of its sections brings to the surface over a thousand tons of coal per day. The section headed by A. Titov, starting in 1977, has annually extracted over 600,000 T. Labor productivity in calculation for one worker here in 1981 was 598 tons per month, and the net cost of a ton of coal was 90 kopecks. In 1982, the collective from the section was obliged to extract 700,000 T and has confidently approaching the outlined goal. The sections of "thousand-producers" in the basin yields 30 percent of the extraction.

Complicated and responsible tasks face the miners of the Moscow basin in the 11th Five-Year Plan, for the entire basin now plays an important role in the fuel and energy complex of the country, especially the central regions of the European sector. It is not easy to fulfill these tasks, since the mines constructed in the 1950's are gradually being worked. Therefore a search is underway for additional, deep reserves for increasing the coal extraction, lengthening the service life of the active enterprises. New mines are being built in the basin.

Thus, at the mine "Brusnyanskaya" a reserve field has been discovered and is already being worked with industrial reserves of almost two million T. High-speed building of galleries of main directions is underway for stripping the reserve section with reserves of 1.5 million T at the mine "Kamenetskaya."

In response to the concern of the CPSU Central Committee and the Soviet government for futher development and technical re-equipping of the coal industry, and improvement of the wages of the miners, the workers ofthe Podmoskovniy basin are futher expanding socialist competition for early fulfillment of the 1982 and five-year plan as a whole, improvement in the efficiency of production, conservation and economy. Last year 2.5 million T of coal were produced above the plan. The assignment for the first half of this year has been overfulfilled. A total of 518,300 T of coal versus 400,000 has been extracted above the plan according to the previously adopted commitments.

9035
CSO: 1822/276

CHELYABINSKUGOL' RESPONDS TO CRITICISM WITH IMPROVEMENTS

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 16 Jul 82 p 4

[Article: "Miners Take Measures"]

[Text] The leadership of the association "Chelyabinskugol'" and USSR Ministry of the Coal Industry have been criticized for interruptions in the planned assignments, and for lagging in the preparation of the stoping front by SOTSIALISTICHESKAYA INDUSTRIYA.

Information about this was published under the heading "We Name the Laggers" on 15 April of this year.

In response to the editorial staff, Deputy Minister of the Coal Industry of the USSR Ye. Rozhchenko reported that the criticism of the association and the ministry was correct. In order to study the created situation and the adoption of measures at the site in Chelyabinsk, a group of specialist from the USSR Ministry of the Coal Industry headed by the Minister B. Bratchenko visited. Together with the local managers they outlined paths for overcoming the lagging in the mines. A set of measures was developed which stipulated primarily guarantee of additional stoping fronts for the mine "Tsentral'naya," "Komsomol'skaya" and "Baturinskaya." On the whole for the association, the number of comprehensively-mechanized faces will be brought to 27, with a rise in the average daily load on the complex of up to 700 T.

In order to solve the set tasks, in the first six months of this year with advance of the schedule the association has already received 11 tunneling combines, 2 complexes "KM-87DN" and one "20 KP", 65 conveyers, drilling machines, railroad cars and other equipment. "Chelyabinskugol'" has been allocated additional funds for cement, rolled materials of ferrous metals, pipes, truck transport, bulldozers, excavators and lifting cranes.

The ministry has entrusted the institutes Scientific Research Institute for Stripping Mine Operations and "Uralgiproshakht" to help the association in questions of preparing extraction fields for the future. The USSR Ministry of the Coal Industry has obliged the association to increase the volume of construction of housing through the forces of the trust "Chelyabinskuglestroy" and economically.

The editorial staff was also answered by the general director of the association "Chelyabinskugol'," A. Druzhinin. He wrote about what is being done to eliminate the causes negativelyinfluencing the work of the mine. Thus, in the mine "Tsentral'naya," new stoping faces have been prepared and opened. This made it possible for the enterprise to increase the daily average extraction of coal in June versus May by 1,360 T. The planned number of stoping faces has been guaranteed for the mine "Baturinskaya."

A lot is being done to reinforce the working cadres. In August a dormitory will be opened for students of the technical school in the city of Kopeysk. Measures have been taken to improve organization of competition at enterprises of the Chelyabinsk coal basin.

The secretary of the Chelyabinsk CPSU obkom, L. Il'ichev reported about measures to overcome the lagging. Joint meetings were held of the active members of the workers in coal extraction enterprises, meetings of the secretaries of the party organizations of the mines and open pits, and councils of the directers. The implementation of the outlined measures will make it possible to improve the work of the association in the second 6 months.

9035
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IMPROVEMENTS OUTLINED FOR KATEK

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 7 Aug 82 p 2

[Article: "Increase the Open Pits of KATEK"]

[Text] The Kansk-Achinsk complex where enormous coal reserves are concentrated has been called upon to play an important role in supplying fuel and energy resources to the regions of East Siberia and the Far East. Urgent problems of establishing it and developing it were raised in the article by the secretary of the Krasonyarsk party kraykom, L. Sizov "Increase the Open Pits of KATEK," which was published in our newspaper on 2 April of this year. The discussion in particular was concerned with the discrepancy in the actions in the ministries and departments participating in the construction, the lagging in housing construction, the need for use of modern equipment to accelerate the stripping operations at the thick coal pits.

Deputy chairman of the USSR Gosplan A. Lalayants in an official response to the editorial staff reported measures which have recently been taken to improve planning of major construction at the complex territory. Capital investments for construction of enterprises and facilities included in KATEK are stipulated in the annual plans for the individual construction site. The funds for equipment, fittings, control-measurments, equipment for automation and other items to complete these construction sites have been allocated so that their shipment is guaranteed in the first 6 months in a sum of 65 percent of the annual need.

The interested ministries and departments have been set specific primary assignments to guarantee in 1982-1985 the start-up facilities at objects of KATEK, as well as for construction of houses, facilities of social-general and communal purpose. The personal responsibility for fulfillment of these assignments has been laid apon the first leaders of the USSR Ministry of the Coal Industry, USSR Ministry of Power and Electrification, USSR Ministry of Heavy and Transport Machine Building, Ministry of Transportation Construction and other ministries.

The USSR Gosplan has additionally examined the question of supplying the open pits of KATEK with powerful excavators. This was also discussed in the article. A decision has been adopted to allocate in 1982 to the USSR Ministry of the Coal Industry two excavators "EKG-12.5" produced by the Krasnoyrask plant of heavy machine building.

Questions of futher improvement in planning, control of construction and operation of the enterprises of KATEK in order to prevent interdepartmental separateness will be especially examined in the USSR Gosplan in the future.

The measures taken to improve construction of housing, objects of cultural-general purpose, trade and public nutrition in the KATEK zone were reported by the Deputy Minister of Power and Electrification of the USSR V. Kozhevnikov. In the cities of Sharypovo and Nazarovo, construction has been started of house-building combines. It is planned to open the first of them this year, which will make it possible to limit, and in 1984 completely eliminate the importing of house building structures from other regions of the country. The houses will be produced with improved planning. The collective "Bratskgesstroy" has been brought for construction of housing and social-cultural-general facilities.

It is planned in 1982 to produce housing in Sharypovo with total area of 90,000 m^2 instead of 40,000 m^2 stipulated by the plan. Efficient monitoring of the course of construction of KATEK facilities has been set up.

After examining the article "Increase the Open Pits of KATEK" writes the Deputy Minister of USSR Coal Industry A. Pshenichnyy, the ministry admitted that it was correct and timely. The USSR Ministry of the Coal Industry is taking measures to increase the number of subdivisions in the trust "KATEKuglestroy" involved in constructing the open pit "Berezovskiy-1." Construction has begun of a well-built pioneer settlement of builders at the Dubinino station. As of 1 July 1982, housing here had been constructed with total area of 54,500 m^2, a kindergarten, three cafeterias, two stores and other facilities. In the third quarter of this year, a club will be opened for 300 places, a school and bath.

Facilities have been erected at the pioneer base for output of commercial-grade concrete, mortar and asphalt-concrete. This year construction will be completed of an automobile base, base of mechanization, workshops and warehouses. Work is being developed to create a support base for the combine. In the first 6 months, the number of workers of the combine "KATEKuglestroy" involved in building facilities for the fuel section of the complex increased by 450 people. At the same time, the plan for construction-installation operations at the open pit "Berezovskiy-1" continues to be unfulfilled mainly because of the lack of completing of the construction organizations. A shortage of worker cadres is explained by the fact that the USSR Ministry of Power and Electrification which is the developer of the city Sharypovo is not fulfilling the instruction of the directive agencies to transfer part of the built housing fund to the coal workers.

The publication also was examined in the RSFSR Ministry of Automobile Roads. The minister A. Nikolayev reported that fulfillment of work to build automobile roads in the region of KATEK has been given to the newly organized Sharypovo Road Construction Administration No 8 and Nazarovo Road Construction Administration No 3. In order to strengthen their production potentialities, six excavators,fourteen bulldozers, six truck scrapers, eighteen truck graders and other necessary special equipment has been allocated.

9035
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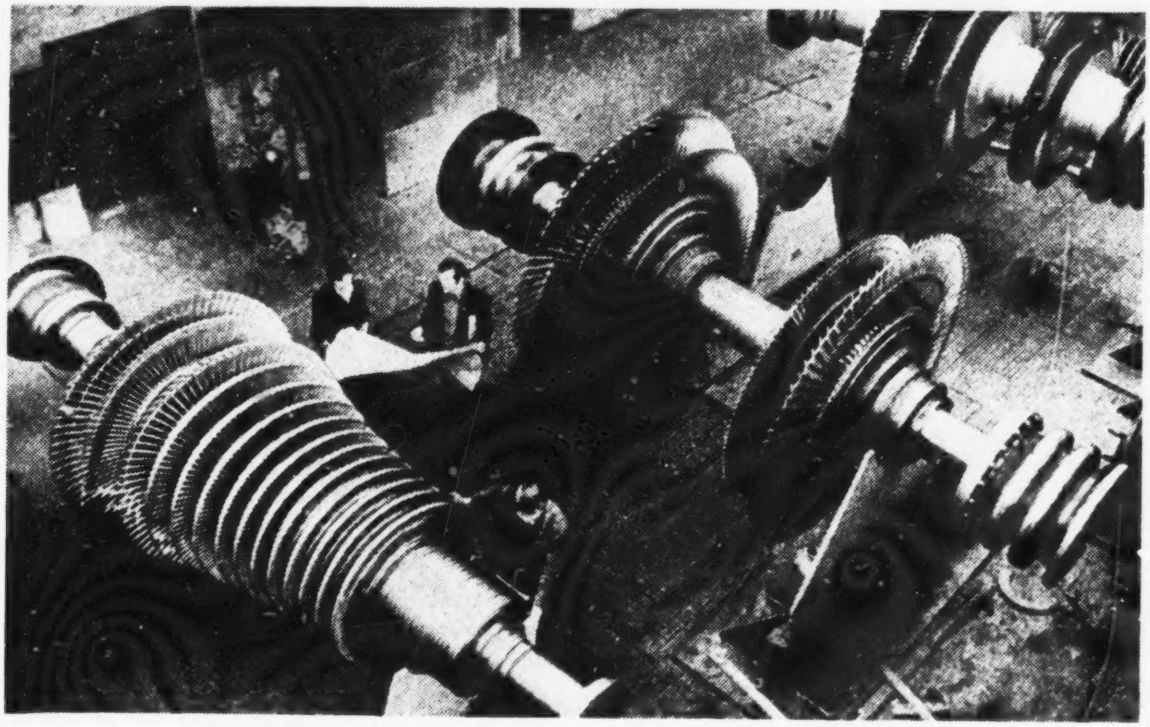
NEW GAS TURBINES FOR URENGOY-POMARY-UZHGOROD TRUNKLINE

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 12 Oct 82 p 1

[Picture caption]

[Text] An area of the mechanical assembly shop.
The collective of the production association "Turbomotor Factory imeni Voroshilov" in Sverdlovsk has begun producing 16,000 kW gas turbines for the export trunkline Urengoy-Pomary-Uzhgorod. In honor of the 60th anniversary of the formation of the USSR, the workers of the enterprise have promised to complete the plan ahead of schedule.



CSO: 1822/23-P

DISPATCHER DISCUSSES UNIFIED SYSTEM OF GAS SUPPLY

Frunze SOVETSKAYA KIRGIZIYA in Russian 19 Aug 82 p 2

[Interview with chief engineer A. Vorotyntsev by correspondent of the Novosti press angency B. Busygin: date and place not specified: "Precise Rhythm of the Gas Pipeline 'Soyuz'"]

[Text] The gas-transport complex "Soyuz" built by the Soviet Union in cooperation with the European countries of CEMA has been continually operating for 4 years. Information of the dispatcher services regarding the passage of the gas stream on the territory of the USSR comes to the Central Dispatcher Administration of the Unified System of Gas Supply of the country which is located in Moscow.

The correspondent of Novosti Press Agency B. Busygin met with the chief engineer of this administration A. Vorotyntsev and asked him to answer a number of questions.

[Question] What is the USSR Unified System of Gas Supply?

[Answer] "If you look here at this plan," the chief engineer points to the wall, "then you see that it is covered with a dense network of twisting lines which stretch into different regions of our country. They designate the main gas pipelines whose extent exceeds 130,000 km. Unification of all of them into a single system makes it possible to rapidly control numerous gas streams and to provide gas to different facilities both within the country and beyond its limits.

The rates of construction operations and length of the routes increase with each year. Their network is shifting more to the north and east of the USSR, where new large fields of 'blue fuel' have been found. The word 'Urengoy' is now identified with six new gas trunklines which will open access to the richest storehouses of West Siberia. The length of each of them exceeds 3,000 km, and the export gas pipeline Urengoy-Uzhgorod extends 4,650 km. All of them will have high throughput, pipes of diameter 1420 mm are being laid in the trenches.

[Question] Probably one of the first "test sites" where these pipes were tested in operation was the gas pipeline "Soyuz"?

[Answer] Yes. Generally the "route of friendship," as it is called in the socialist countries, in its technical parameters occupies a special place in pipeline transport of the USSR. The route of 2750 km intersects three union republics, RSFSR, Kazakhstan and the Ukraine, and carries that quantity of "blue fuel" which contains energy equivalent to the potentialities of five GES's as the Bratskaya on the Angara.

The branch network of dispatcher stations which encompasses all the sections of the gas pipeline helps to control such a powerful stream. Each compressor station is under strict monitoring. Using a computer and television devices, the dispatchers follow the regime in which the complicated electronic equipment is operating, and guarantee observation of the assigned parameters. The dispatcher points at the compressor stations maintain constant communication with their central dispatcher services in Orenburg, Saratov, Volgograd, Cherkassy, Ivanovo-Frankovsk which rapidly send information about "Soyuz" on an automatic system of data transmission to the central dispatcher administration in Moscow.

The precision activity of the dispatchers, the excellent technical equipment severs as a guarantee of reliable operation of "Soyuz." During its operation there were no stops in the supply of gas or any technical malfunctions. Say that at some station preventive maintenance is done, then the lacking facilities because of the disconnected gas pumping unit are compensated for by additional loading of another station. Thus, the quantity of pumped raw material at one level is successfully preserved.

Over one hundred billion m^3 of gas have been shipped on the gas transport system "Soyuz" during the years of its operation. About half of this volume came to the countries participating in the construction, People's Republic of Bulgaria, Hungarian People's Republic, GDR, Polish People's Republic, Socialist Republic of Romania, and CSSR. The remaining "blue fuel" went for the needs within the country and for export to the capitalist countries. The general agreement on shipment of gas to the CEMA states was not interrupted at all, and at the request of the GDR and Poland shipments to these countries were even increased in 1982.

[Question] One facility, a plant whose construction is being completed by the Czechoslovakian builders in the Volga city of Kamyshin is closely associated with the "Soyuz" gas pipeline. What is its purpose?

[Answer] This plant is for repair of production equipment. The method of plant repair at gas pipelines has recently been used in the USSR. Now it is becoming more widespread. Large assemblies of units from compressor stations will be repaired at the plant areas. This will significantly improve the quality of repair. It is complicated to perform this work at the station itself. The Kamyshin plant will service not only "Soyuz," but also other close gas pipelines. Its start-up will increase even more the reliability of the "route of friendship."

9035
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VOLGA-VYATKA PIPELINE EXTENDS FURTHER

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 3 Aug 82 p 1

[Article by U. Bogdalov, our in-house correspondent: "The Route Goes Over the Horizon"]

[Text] The 30-meter band split the green vastness to the horizon, just like the landing strip of a giant airport. The impressive sight depressed only the chairman of the kolkhoz here who came to call on the route workers. He spoke bitterly of the hectares which were lost from farming.

"Don't worry, we will preserve the ground as in a savings bank," the head of the excavators of the fourth construction section V. Ivanov calmed the chairman. "We will cover the pipe, and we will return the fertile layer to its place. It will do double duty, it will grow grain and the gas will pass through it."

The route moves ahead boldly. A week ago at the band prepared for recultivation, the excavators penetrated the ground for the first time. Today the clay shaft smoothed by recent rains, extends five kilometers. The black length of pipe goes twice as far beyond the horizon. It seems as if the trench is attached to the very edge of the blue sky. You can see the entire construction site of the gas pipeline, perhaps only from the orbit of "Salyut," and then not immediately.

"Our section of the gas pipeline Urengoy-Uzhgorod," says the head of the production section of the trust "Tatnefteprovodstroy" I. Lukovskiy, "extended from the Volga to Vyatka 230 kilometers. We are faced with passing 15 large and small rivers, crossing railroads and highways many times. And we have to do this without interrupting the transport traffic."

We see how this is done on the road Kazan-Dubyazy in the morning. The base of the road bed is extended minutely by the route workers. The cars travel without delay above the drilling unit rumbling in the earth. There is a special approach to ravines at this construction site. The pipes never cross them in air or on bridge structures, only underground. Therefore the ravines are filled, and water-passage structures are installed.

The gas pipeline is not only a pipe laid at a depth of 2.5 meters. It is also well-built cities for the builders, powerful compressor stations, high voltage transmission lines and communications. In Pomary and Shemordan, the trust has been building base housing cities since early spring. Two-apartment arbolite houses installed here are equipped with all the conveniences. Next to each there is a garden. Field athletic complexes are being built for the route workers with swimming pools, and saunas. The route is no longer a synonym for harsh life. This foresight is understandable. In the near future another four lines of powerful gas pipelines separated from each other by several tens of meters will be laid through one "corridor."

"Tatnefteprovodstroy" plans to finish all the work on the Urengoy-Novopskov route by the end of the year. But the situation has required compression of time, and the trust, having mobilized all reserves, will complete the assignment already in August.

The production line headed by Hero of Socialist Labor I. Shaykhutdinov has been sent to the route of the export gas pipeline. A total of 34 kilometers of long lengths have been welded at the pipe-welding bases. Fourteen kilometers of them have been brought to the route and ten have been connected into one line.

Becoming familiar with the work of the "Tatnefteprovodstroy" laborers, you see that they all have one task: do as much as possible to the approach of the main forces. Advance futher the band for subsequent recultivation, weld more lengths and cut clearings in the forest. The maximum output is required from people, machines and mechanisms. But not everything here depends on the builders of the trunkline.

For the first time the trust has started to use the powerful welding complex "Styk" that was developed by the Kiev Institute of Electric Arc Welding imeni Ye. O. Paton. It should guarantee highly productive high-quality welding. Now, however, this is not being done, no matter how they struggle at the route. Criticism here should be aimed at the specialist of the institute who are giving different excuses for refusing to help the welders.

This situation is inexcusable the more so since accelerated laying of the gas pipeline after the known sanctions of the Reagan administration has become an important and primary matter not only of the direct builders of the route. Glavtatstroy has started to cut kilometers of forest "corridors" near the Volga. This is not only help, but also prudent use of lumber. The organizations of the local Soviets of People's Deputies are being actively included in the work. It was said very accurately at meetings which took place in many collectives: no bans will stop the great construction site.

9035
CSO: 1822/278

DESPITE DIFFICULTIES, VYKSA PLANT PRODUCES MULTILAYER PIPES

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 21 Aug 82 p 1

Article by V. Noskov, in-house correspondent: "There are Multiple-Layer Pipes!"

> [Text] The first several thousand tons of multiple-layer pipes for laying the superpowerful gas pipelines from West Siberia and construction of water pipelines for irrigation systems in Central Asia have been sent by the collective of the Vyksa metallurgical plant.

In Vyksa for the first time industrial technology has been mastered for production of a unique product which has been called upon to complete the current technical revolution in pipeline construction. It has been introduced and has been operating not at an experimental section, but in a modern shop equal in scales to an entire plant. The shop with its auxiliary rooms and services is located on a territory of several dozens of hectares. The main equipment occupies a bay almost a kilometer long. Only the first phase has been started up.

"We can produce multiple-layer pipes at the same time of several diameters and with different thickness of the walls, depending on the purpose," relates the head of the shop B. Yefremov. "They are designed for working pressure of 100-120 atmospheres, which is roughly double the pressure in the currently operating gas trunklines."

The new pipes will permit a much greater improvement in the throughput of the underground steel arteries and conservation of a lot of metal. Where previously two lines of gas pipeline had to be laid, one can now get by completely with one.

We are going along the roller conveyers which are operating in an automatic regime. Metal bands are cut without the interference of man. In front of our eyes, bands of metal are converted into round shells 1.5 meters long. The machines rapidly lay even seams on the circumference. Special units using ultrasound check the quality of the welding.

The complicated equipment requires high skill of the service personnel. It is no accident that the majority of workers here have secondary special education. The class of skill is indicated by the electric welders A. Ryabov, S. Luk'yanchikov, L. Borisov, defectoscope operator G. Glebova and many others. Communists are working at the most important production operations.

But not everything in the new shop is going smoothly. In August for reasons not depending on the collective, the unique equipment was standing for more than 10 days. The Zaporozh hardware plant had not shipped the welding wire in time. Interference of the first deputy minister of ferrous metallurgy of the USSR S. Kolpakov was required in order to bring the subcontracters into order.

"We do not have any guarantee that the shop again will not be in a difficult position," notes the brigade foreman V. Yeremin. 'We have just returned to the Cherepovets plant about a thousand tons of defective metal. We are again preparing to return another eight rolls."

It is imposible not to discuss another problem. At the request of the gas workers in Vyksa, manufacture of multiple-layer pipe with plant insulation was started so that they could be immediately welded into a line at the site. This requires equipping of a special section. This question was solved at a joint meeting of the representatives of the union Ministry of Ferrous Metallurgy and Ministry of Construction. In the protocol signed by the ministers I. Kazanets and G. Karavayev, it is written: "Guarantee start-up of the experimental-industrial section for covering pipes with polymer bands in July 1982." But we are already approaching the end of August and this decision has not yet been fulfilled: the builders of trust No 10 "Metallurgstroy" let us down.

Before the end of the year the collective of the shop has been obliged to manufacture 80,000 T multiple-layer pipes. There are potentialities for this. Everything should be done in order that they can successfully fulfill the plan and more rapidly produce the first phase of the new industry at full power.

9035
CSO: 1822/278

RIVER CROSSINGS OF MOZDOK-KAZI-MAGOMED PIPELINE DESCRIBED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 15 Aug 82 p 1

[Article by L. Aleynik: "Through Mountain Rivers"]

[Text] Builders and installers from USSR Ministry of Installation and Special Construction Work and the Ministry of Construction of Oil and Gas Industry Enterprises are working on laying the main gas pipeline Mozdok-Kazi-Magomed at an intensive rate. Here, on the route, the start-to-finish "worker's relay race" is in operation. It is imposible to work any other way for the gas pipeline is the start-up object of this year.

"The most complicated sections are the junctions through the mountain rivers of the North Caucasus, where there are floods after downpours and large discharges of water, and there is a complicated hydrogeological situation on the entire route," relates the manager of the trust "Gidrospetsfundamantstroy" Artem'yev. "Now we have to drain off the river bed and erect dams. In a word, there are enough difficulties but a lot has already been done. The piling junctions are ready for the Terek and Sulak. In the complicated rock waste deposits at the Sulak, our experienced foundation builder-drillers have successfully rapidly drilled wells and prepared 44 drilling-rammed pilings. Everything has been completed on time here.

Only 2 months were required for the collectives of the trusts "Gidrospetsfundamantstroy" and "Promburvod" to drill under these complicated conditions. Now they have moved their drilling machines and other equipment to the Samur River.

The specialist of the trust "Gidrospetsfundamantstroy" in cooperation with the scientist from the institute "Fundamentproyekt" have successfully significantly helped to accelerate work on the route. They have suggested changing the project and reducing the diameter of the piling by 28 centimeters. This yielded great conservation of labor outlays and decreased the consumption of concrete.

Now the subdivisions of builders and installers are making a forced crossing of the Gyul'gerychay River. Here the leading drilling foremen A. Romanenko, A. Kostin, machine operator of the crane, machine operator of broad profile R. Rezayev, the drillers from the "Promburvoda" N. Vasil'yev, Ya. Shpilevoy and other cadre workers are preforming excellent labor here. On the entire route of the construction site, competition is expanding of the collectives in honor of the approaching anniversary of our country, the 60th anniversary of the USSR. The efforts of the subdivisions and brigades are aimed at the most rapid completion of the special construction work already in September so that the collectives of the Ministry of Construction of Oil and Gas Industry Enterprises will be ahead.

9035
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URAL TURBOMOTOR PLANT SHIPS PIPELINE EQUIPMENT

Moscow IZVESTIYA in Russian 25 Aug 82 p 1

[Article: "Urals-Gas Trunkline"]

> [Text] One of the major suppliers of modern equipment for gas pipelines in our country is the production association Ural Turbomotor Plant imeni K. Ye. Voroshilov. The collective of the enterprise has decided to fulfill the order for shipping equipment for gas pipelines ahead of schedule and in complete volume. These trunklines connect Urengoy with the center of the country and the European countries. In response to the discriminatory measures of the U.S. administration, the Sverdlovsk turbo motor builders in cooperation with the Leningrad and Sverdlovsk collectives of the plants are planning not only to realize the planned assignment, but also to exceed it a great deal. The fulfillment of the important order is discussed by the general directer of the association O. Podberezin with the correspondent of IZVESTIYA.

The collective of our association decided to multiply its efforts for early construction of the Urengoy-Pomary-Uzhgorod gas pipeline. We the people of the Urals have the forces,common knowledge and experience, and the technical potentialities to guarantee early shipments of equipment for the trunkline under construction. The Ural turbo motor builders have adopted the commitment with great upsurge, this year already to prepare above the plan 1 gas pumping unit, and in 1983, 14 powerful units instead of the 10 previously planned.

Of course, not very much time has passed, but the results are already visible. The engineering-technical thinking, and working initiative did not stand still even earlier. They were actively working. In recent years the Ural turbo motor builders have designed and implemented into metal industrial samples of a new and more powerful gas pumping unit for pipes of diameter 1420 mm. Its daily productivity is 2.5-fold greater than the previously manufactured series units. This machine surpasses similar American units in a number of technical designs and economic indicators.

In parallel to this technical innovation, the collective of the plant has been intensively working on implementing the technical and organizational measures outlined in the commitments which guarantee accelerated increment in the production facilities. Reconstruction of the second mechanical-assembly shop is going at full speed. Its areas where assembly, breaking-in and testing of new equipment are done are being doubled in size. We are installing on them the most modern machines and are equipping yet another test stand. The blade shop is experiencing its second birth.

Of course, as always, the main driving force is socialist competition, in particular "worker's relay race," the brigade system of organizing labor with the use of the collective contract, calculation of conservation of materials, electricity, labor resources and much more.

The best people in the plant have become the leaders of the innovator movement, turner of the first mechanical assembly shop V. Zykov, brigade foreman of the second assembly shop A. Mishakov, and milling machine operator of the shop of turbine assemblies S. Mikheyev. Their commitments include: fulfillment of increased assignments ahead of schedule without increase in the number of brigades. The question is very important, since the volumes of work are rising, and naturally, the demand for skilled personnel is also rising.

We naturally in the fulfillment of such important assignments are connected to many enterprises of the country. Cooperated shipments cover a broad circle of plant collectives, primarily in the Urals and Leningrad. Our association traditionally and in a business-like manner cooperates with "Uralmash." Creative contracts have been formed with the Neva machine builders, with the workers of the metallurgical plant and the Leningrad plant of turbine blades, with many construction organizations. Of course, the timely fulfillment of the state assignment depends a lot on our subcontracters.

Here one should stress that all of us have been united by the "worker's relay race." We have appealed to our subcontracters to search for reserves and to provide cooperated shipments ahead of schedule. All of them responded in a business like way to our request. This year the collective of "Uralmash" will additionally supply to the turbomotor plant 210 T of forged pieces, discs and rotors. This is an above-plan load for the Ural machine builders. But this is the basis for the worker's mutual assistance: in the work time they support their commrade, and extend to him the hand of mutual assistance. Our order was understood by the production workers of the sector flagship. On the initiative of the committees of the Komsomol of the subcontracting plants, start-to-finish posts developed in the shop. They strictly follow the fulfillment of the shipment schedules and the quality of the metal.

The collectives from the trust "Sverdlovskpromstroy" are taking the most active participation in the "worker's relay race." On short schedules they must erect a solid base for the new industry, in particular, make a foundation for the machine fleet, prepare for start-up yet another stand for testing the more powerful gas pumping units.

We are placing high hopes on the Leningrad suppliers. The timely start-up of four objects depends a lot on them. This year they should already equip the Ural pipe builders with modern equipment. Three large enterprises of the city on the Neva, the plant of turbine blades, the associations "Nevskiy mashinostroytel'nyy zavod" imeni V. I. Lenin, and Leningradskiy Metallicheskiy zavod" according to the active cooperation must supply us with intermediate parts, and also partially work the blades and polished disks. The people of the Urals are confident that the Leningrad collectives will cope on time with the fulfillment of this important order.

Of course, many problems are developing which need to be solved urgently. Increase in the volumes of the order and shorteningof the periods of its fulfillment required not only readjustment of production, but also exacerbated the problem of personnel. Now we do not have enough professions of machine operators, including gas cutters and electric welders. Taking into consideration this situation, the board of the association, party and trade union committees have developed a program for accelerated training of skilled specialists ofthese professions. We hope that the local soviets involved in the organizational selection of the work force will make their contribution to such an important matter.

Even more perceptible help is required in fulfilling the adopted commitments on the part of the planning-technological and other scientific institutions. With a basic technical renewal of production, we need the development of scientifically substantiated programs to switch the machine fleet to more intensive, accelerated regime. Here the advice and consultation of the scientists and metal experts are very important.

The Ural turbomotor builders are doing everything so that the order which was given by the motherland will be fulfilled on time and completely, namely to have a worthy meeting of the 60th anniversary of the formation of the USSR.

9035
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PIPELINES

AUCCTU COORDINATION COUNCIL EXAMINES RESULTS OF WORKER'S RELAY RACE

Moscow TRUD in Russian 20 Jul 82 p 2

[Article by V. Kapel'kin, special correspondent of TRUD: "Broad Step of 'Worker's Relay Race'"]

> [Text] The rate of socialist competition of the collectives participating in construction of the main gas pipelines of West Siberia-European sector of the USSR and the export line Urengoy-Uzhgorod is picking up speed. Last year the AUCCTU created a coordination council for the development among the labor collectives participating in construction of the main gas pipelines of socialist competition on the principle "worker's relay race," which united the efforts of organizations and enterprises in dozens of sectors, local trade union headquarters of the competition. Our story today is about the out-of-town expanded meeting of the coordination council in Kuybyshev, which was held by the secretary of AUCCTU I. I. Gladkiy. It began with a trip to the route.

Passed the green Zhiguley-gor, in the brisk "Zhiguley" cars we are traveling towards the Tolyatti compressor station of the Urengoy-Petrovesk gas pipeline. Here is an interweaving of enormous pipes, airplane hum of two active structures and lively construction site of the new station. A. A. Volkov, deputy manager of the trust "Kuybyshevtruboprovodstroy" is guiding the guest around the facilities.

It also seems to the uninitiated that the gas pipeline is simply a long-super long pipe. But the blue fuel does not travel by gravity thousands of versts. It is pushed ahead by the powerful pressure of compressor stations. There are dozens of them. The Tolyatti, for example, is the 21st, if you count from Urengoy.

Anatoliy Andreyevich reported: here the pins were driven in in December of last year. Now, in March, the last foundation has been completed. Now the equipment installers are already working in the building.

About 800 enterprises, planning, contracting, transport organizations included in 40 ministries and departments have been involved in construction of the main gas pipeline. The outlays for laying six gas mains in this five-year plan will exceed the cost of building KamAZ [Kamchatka Automobile Plant], BAM [Baykal-Amur Trunkline], VAZ [Volga Automobile Plant], "Atommash."

The head of the coordination council, chairman of the trade union central committee for the workers of the oil and gas industry, V. T. Sedenko dedicated his speech to the task of the committees of trade unions, economic leaders for mobilization of the efforts of the labor collectives in the Tyumen Oblast, subcontracting organizations for successful fulfillment for the plans and commitments for 1982.

The "worker's relay race," which is directed by the coordination council makes it possible to dispose of the available resources better. It happens that the long-awaited equipment gets stuck somewhere on the way to the construction site. The "worker's relay race" should help this.

The question of changing the periods of shipments planned by quarters is being solved favorably for the situation. That is, the enterprises can immediately ship products at the end of three months, and no one has a right to formally criticize them. However the builders of the gas trunklines are often interested in receiving equipment in the beginning of the quarter. The "worker's relay race" helps to implement this. Say that the Moscow production association "Borets" of the Ministry of Chemical Machine Construction is preparing a shipment of the compressor "UKP-80" to Urengoy in July, although initially it was planned for August-September.

These measures help to coordinate the efforts of the labor collectives and to set up a precise rhythm.

This is the so called outer ring of the subcontracters. Now let us talk about the small loop of the "worker's relay race" which encompasses the brigades of route workers. In the trust "Severtruboprovodstroy" the welding-installation brigade of USSR State Prize laureate B. P. Diduk, brigade of installation workers V. D. Madenov have become the initiators of this comprehensive competition. United by contracts of cooperation with the extracting complexes of machine operators, transportation links and other collectives, they are leaving behind them 1.5-2 kilometers of finished route per day.

"The worker's relay race" helps to introduce line methods of construction in other sections of the trunkline. Recently the Ministry of Construction of Oil and Gas Industry Enterprises issued an order for organization of work of comprehensive cost-accounting production lines whose teams should move one after another in strict synchronism.

If one team of the production line, say the machine operators-excavators, goes way ahead, then there will be no benefit: the trenches will fill up, and they will have to be redone. On the other hand, the same machine operators do not have the right to reduce the rates if the subcontractors are pushing. The lagging brigade holds up the entire line. The contract of the brigade "worker's relay race" is the regulator which measures out a common beat of movement.

Together with the deputy head of the administration for organization of labor and wages of the USSR Ministry of Construction of Oil and Gas Industry Enterprises, V. N. Cheschko, we leafed through the standard contract of worker cooperation concluded by the collectives of 13 brigades of the comprehensive production line V. A. Nazarov from the trust "Mosgazprovodstroy." The interval between the brigades of subcontractors was defined here as hundreds of meters so that there would be no surplus reserve, and no "tails" would be left. Initially the daily assignment was a kilometer of finished route. But all the teams of the line, united by the "worker's relay race", we stress all the teams, rythmically and smoothly quickened the speed and produced their section of the Urengoy-Novopskov route not by the Day of Victory, 9 May, but by 22 April, the 112th anniversary of the birthday of V. I. Lenin.

The tool with which the coordination council of the AUCCTU controls the competition, and maintains its heat, is rapid summary of its results. Many are probably familar with the pattern where the results for the sectors are summarized once a quarter, and the banners are presented to the leading workers sometime in the middle or even the end of the next period. The Ministry of Construction of Oil and Gas Industry Enterprises on a national scale summarizes the results of competition for laying the line section of the pipelines weekly, for the construction of compressor stations, every two weeks. Data are published on the route for the day. And encouragement of the best workers is not held up.

Recently the builders and gas workers started a new initiative to produce the main routes two-three months ahead of schedule and to bring them to the rated output in the year of start-up. There are no equal rates in the world. Say, the Americans in laying their famous oil pipeline "Great Inch" from Alaska to the central states did not surpass our rates achieved at construction of the gas pipeline Bukhara-Urals, not to mention the modern results.

But naturally there are problems, and not all of them are solved on the spot. The secretary of the Kuybyshev oblast trade union N. D. Korol' and other speakers asserted: the time has come to regulate payment for work of the line engineers, foremen and men in charge, whose level today is two-three-fold lower than the average wages of the workers. Now in laying the export line Urengoy-Uzhgorod the Ministry of Construction of Oil and Gas Industry Enterprises is making an experiment: four enlarged lines which include even service personnel of the field cities, count on finished product, kilometers of pipeline laid and filled and ready for testing. These lines have contracted to lay before the 15th of December a total of 460 km of route, that is, each collective had taken upon itself a volume of work which recently only a medium sized trust was capable of. It is remarkable that the wages of the line engineers here have been included in a single order with the workers and will depend on the total result. Of course, its basis is the official salary of the foremen and men in charge. Part of the resources conserved with reduction in the managerial apparatus is also added, but there is also a percentage of the piecework extra earning of the brigade and all types of bonuses for the collective. Study of this experience and improvement in the system of stimuli is within the competence of the State Committee on Labor, Ministry of Finance, and of course, the Ministry of Construction of Oil and Gas Industry Enterprises itself.

Behind the routes which are striding in seven-league boots, behind the structures of the pumping stations and wells of gas extraction which are growing up like mushrooms, we also see the problems of the people who must live and work, servicing these structures at times in the wildest places. It is planned to settle everyone in well-built settlements with a complete set of social-cultural-general facilities. But unfortunately, the advances on this front are considerably more modest. The secretary of the AUCCTU I. I. Gladkiy focused attention of the coordination council on the fact that it is impossible to permit an interruption between production and housing-civil construction. "In order not to overlook the periods for erection of houses, schools, kindergardens, and stores it necessary to use all the strength of the trade union influence, all the rights and authorities," he stressed in his report.

The debt for start-up of the route settlements, facilities even in the cities of West Siberia is accumulating for the subcontractors Ministry of Construction of Oil and Gas Industry Enterprises, USSR Ministry of Construction, and USSR Ministry of Heavy Machine Construction. The leaders of the ministries have often promised to correct the situation, they have developed measures, and sent their representatives to the site. But the warning signals are again sounding. Say, of the 11 kindergartens and 7 schools which currently should be provided for the workers of the all-union production association "Tyumengazprom," in the first 6 months not even 4 facilities had been started. The subcontracting headquarters of the Ministry of Construction of Oil and Gas Industry Enterprises which are operating in the Tyumen Oblast are responsible for this. They have adopted the following practice: instead of several facilities in the route settlements, they construct one large one in an inhabited city, and in the reports on the number of places for students or preschoolers figure, and not the number of facilities.

Of course there are changes for the better. Last year 78 percent more apartments were built for the workers of the all-union production association "Tyumengazprom" than in 1980. Take the capital of the gas workers, Novyy Urengoy. Four years ago this was a small settlement consisting of trailers, gullies and panel houses. Today this is a city with a population of many thousand. But the demand for housing and social-cultural-general facilities is persistently rising and is still far from complete satifaction.

Representatives of 17 sector trade units, and 29 ministries in the hall of the Kuybyshev Oblast trade union reinforced with their signatures the contract "worker's relay race," a large-scale and all-encompassing document. The headquarters, associations, enterprises, trust, institutes and organizations adopted commitments in which their contribution to the construction of the gas pipelines is prcisely measured in tons, kilometers, rubles etc.,and is limited by intensive schedules. The motto of cooperation, from mutual claims to mutual help and support, reigns in each of the dozen signatures of the contract on creative cooperation.

Sharing thoughts about the ways to develop comprehensive competition, the secretary of the AUCCTU I. I. Gladkiy noted that the "workers relay race" may also be just as useful in other spheres of the national economy, say associated with the implementation of the food program. It will help to reduce the interruptions in the food conveyer, and losses of products. Now, with the creation of agricultural-industrial associations, the actual structure of the agricultural industry call for a worker's, and more precisely, a worker's-peasant relay race.

In cooperating with progress of economics, comprehensive competition strengthens the consciousness of the common nature of goals, converges the collectives that primarily did not "see" each other behind the departmental fences. The "worker's relay race" educates business-like large-scale thinking people who are necessary for each sector.

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PIPELINE CONSTRUCTION PROGRESS REPORTED FROM KURSK OBLAST

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 15 Aug 82 p 1

[Article by N. Savchenko, editor of the newspaper MOLODAYA GVARDIYA, and V. Pisarchik, our correspondent: "Camomiles Along the Route"]

> [Text] The builders of the Kursk arm of the Urengoy-Uzhgorod gas pipeline are extending the trunkline ahead of schedule

Back in spring one could define the site of the future route only by pegs. Now the landscape has been cut by trenches with ravines made of rich chernozem. Around there is a sea field camomiles. The camomiles are even on the table of the head of the construction-installation section No 4 of the trust "Krasnodartruboprovodstroy" V. A. Azanov and they are probably from this field.

During the entire trip to the gas route, we were presistently accompanied by rain. We saw the idle combines and imagined how the machine operators were cursing the weather. Azanov was also disturbed: he also had to stop work.

Of the almost 5,000 km of Urengoy-Uzhgorod gas pipeline, the section of Azanov is responsible for 104. The comprehensive production line as the powerful subdivisions are now called, similar to a fourth section, is noticeablyahead of the schedule for gas pipeline construction. Azanov sites the figures: 51 km of pipes have been welded into lengths, 36 are ready.

"There are all the prerequisites," says Azanov, "for us to complete the work ahead of schedule. The most important is that we have a full set of pipes. We are now working while there is daylight, and there are nc interuptions if the weather is not an obstacle. Here, on the line, we have a special feeling for how insignificant are the efforts of the American administration. We are installing pipes of the firm "Mannesman,' and Italian, and now we are welding our own from the Khartsyzsk pipe plant."

Azanov himself has been building gas pipelines for 20 years. The young people, Azanov believes are more dynamic and master the innovations more rapidly. The head of the section himself was sent to courses of gas electric welders, selected the fellows, and formed two Komsomol-youth brigades.

The pairs of welders are generally formed on the principle: one is more experienced the other is from the young people. A. Trofimov and V. Pirogov. Yu. Maloletov and N. Kopygin. One is in the pipe, the other is on the outside. Team after team, butt-joint after butt-joint, the gas pipeline becomes a length. From the very birth of gas welding, this work has been done by hand. But now a new step has been taken. The brigade of V. K. Leont'yev is mastering a unit which was developed in the Kiev Institute of Electric Arc Welding imeni Ye. O. Paton. Usually a brigade has 11-13 people, but for working with the youth unit they need half the number.

But now, unfortunately, complexities have developed in its manufacture. According to the words of the institute designers, the process of production of "Styk-1" is behind the project at the plant conveyor. Thus unfavorable criticism develops.

"We are very interested in this unit," says the head of the section. "If you have the opportunity, send my words to everyone on whom manufacture of 'Styk-1' depends."

It began to drizzle again. The combines again halted on the neighboring fields. Again the brigade foreman began to look to the horizon: was there not a clearing? No one goes home until dark. The welders conserved every minute. It can be no other way for brigades are on a contract. The brigade of B. Ye. Rudikov, for example, plans to finish fulfillment of the contract in September. Forty kilometers of trunkline have been assigned to it. By the way, this is almost the annual plan of the section.

"Honestly speaking," Azanov admitted, "I am no longer worried about this length. Now I am planning pipes and equipment for the next trunkline: Yelets-Kiev."

The section which now seems to be a wound, will soon disappear from the face of the earth. The next length of pipes of almost 1.5 m in diameter will be laid, the chernozem will be returned to its place, and next summer camomiles will again blossom. A deep river of gas will flow at a depth of three meters.

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SYNOPSES OF ARTICLES IN 'CONSTRUCTION OF PIPELINES', APRIL 1982

Moscow STROITEL'STVO TRUBOPROVODOV in Russian No 4, Apr 82 pp 47-48

UDC 621.643/553.002.2+62.001.7

WORK BETTER, WORK MORE EFFICIENTLY

[Synopsis of article, pp 2-5]

[Text] The results of work of the sector in the first year of the 11th Five-Year Plan, task of the collectives of the ministry for fulfillment of the state plan of economic and social development of socialist commitments for 1982 and the 11th-year plan which were examined at an expanded meeting of the board of the Minisry of Construction of Oil and Gas Industry Enterprises are presented. The basic trends for solving the set tasks are indicated.

UDC 621.643.002.2+331.876.4

PATRONAGE OF THE KOMSOMOLS FOR THE MOST IMPORTANT CONSTRUCTION SITES

[Synopsis of article by A. P. Vesel'yev, pp 6-8]

[Text] The enormous national economic and political importance of the program for constructing gas transport systems from West Siberia to the center of the country is stressed. The weighty contribution of the Komsomols and young people to constructing the gas transport systems is noted. Recommendations are made for developing the patronage of the Lenin Komsomols over the central construction sites of the five-year plan. Specific measures are indicated for giving help to the construction site.

UDC 621.643:620.197.6

ALUMINUM COATINGS FOR PROTECTING HEAT NETWORKS FROM SOIL CORROSION

[Synopsis of article by M. V. Chizhevskiy, V. I. Pavlov, N. I. Semakin, et al., p 15]

[Text] It is shown that the main reason for the malfunctioning of thermal networks is the electrochemical corrosion of the outer surface of the pipes. Basic reasons are defined for corrosion destruction of pipelines. Data are presented from laboratory tests and full-scale observations. Designs are suggested for units and technology for applying the aluminum coatings which make it possible to considerably increase the operating life of the heat networks. 1 illustration.

UDC 621.643:621.791/330.13

SELECTING THE CRITERION FOR EFFICIENCY OF WELDING-INSTALLATION OPERATIONS

[Synopsis of article by A. K. Moroz, pp 16-17]

[Text] It is noted that solution to the task of optimization of construction is characterized by high complexity. Different methods are described for approaching the solution to this problem. It is shown that the most efficient is evaluation of efficiency of welding-installation operations using the minimum adjusted outlays without consideration for the time factor. The presented evaluation of efficiency can be used both in planning and the process of constructing the pipeline.

UDC 621.643:620.197.6

EFFECT OF SURFACE TREATMENT OF METALS ON ADHESION PROPERTIES OF POLYMER COATING

[Synopsis of article by O. I. Chernikov, L. L. Mitrokhina, Yu. S. Vasil'yev, et al. pp 17-18]

[Text] It is shown that regulation of adhesion properties can be done by changing the surface energy of metal and the polymer coating. A design is suggested for the coating. Parameters are defined for the critical surface tension of wetting. Methods are presented for regulating the adhesion properties of polymers to the metals, of which the most promising is chemical treatments of the metal surface. 1 table.

UDC 621.643.002:12.001.24

PREDICTING THE DURATION OF CONSTRUCTION OF THE LINEAR PART OF MAIN PIPELINES

[Synopsis of article by L. G. Telegin, B. N. Kuretin, V. N. Bespalov et al., pp 18-20]

[Text] A method is suggested for predicting the duration of construction based on statistical data for individual main pipelines. It is noted that the results of the forecast must not be the amount of time in a pure form, but the enlarged amount of labor-intensity. A technique and results are presented for calculating the values of parameters of the linear equation of regression. The duration of construction of the pipelines of different diameters is shown depending on the relative length of the route.

UDC 621.643.002(204.1)

DETERMINATION OF THE LENGTH OF A STINGER IN LAYING UNDERWATER PIPELINE FROM A BARGE-PIPELAYER

[Synopsis of article by T. N. Kiyasbeyli, G. T. Abdullayev, D. R. Nazirova, et al., pp 20-21]

[Text] An examination is made of the method of laying an underwater gas pipeline from a barge-pipelayer equipped with a system of stingers. An analysis is made of the stress-deformed state of the laid gas pipeline depending on the depth of laying, number of stingers and amount of thrust. A technique is suggested for selecting the optimal number of stingers and the amount of thrust for preventing an accident on the gas pipeline while laying. 1 illustration.

UDC 621.623.001.24

IMPROVEMENT IN THE DESIGN OF MULTIPLE-LAYER PIPES

[Synopsis of article by A. D. Dvoyris and G. M. Chichko, pp 21-24]

[Text] Note is taken of the features of multiple-layer pipes which have a negative effect on their efficiency. A design is suggested for a spirally-turned shell which guarantees normal efficiency of the pipe regardless of the lack of hermetic sealing of the inner layer. An example is presented for calculating the final static pressure acting on the inner and outer surfaces of the layers. It is shown that removal of the infiltrate through the broken outer seam prevents destruction of the multiple-layer pipes made of spiral-turned shells under conditions of a lack of hermetic sealing. 4 illustrations.

UDC 624.154.001.24

CALCULATION OF PILING FOUNDATIONS CONSTRUCTED ON FROZEN GROUND

[Synopsis of article by V. Ye. Poluektov and O. A. Rayskiy, pp 24-26]

[Text] Data are presented regarding tests of reinforced concrete piling-instruments by static and dynamic loads. It is established that the depth of fastening of the pilings in the ground under the influence of a static horizontal load depends on the amount of this load and on the depth of seasonal thawing of the ground and does not depend on the duration of the effect of the load. In calculating the pilings for the effect of dynamic of horizontal loads, the depth of fastening of the pilings should be assumed to be equal to the depth of seasonal thawed layer. 2 illustrations.

UDC 69.033/656

TRANSPORTING OF SUPPERBLOCKS AT CONSTRUCTION SITES OF WEST SIBERIA

[Synopsis of article by I. Ya. Rastegayev, pp 27-28]

[Text] Examinations are made of the design of a device and the technology for fulfilling operations to transport superblocks weighing up to 400 T from the manufacturing plant to the site of installation on the foundation. Advantages are shown of the set of suspended equipment on an air cushion which makes it possible to reduce the transportation expenditures and improve the quality of the work done. 2 illustrations.

UDC 621.643/621/315.6

USE OF FOAM PLASTIC FPB FOR THERMAL INSULATION OF PIPELINES

[Synopsis of article by Ye. V. Antonova and B. I. Stefurak, pp 29-30]

[Text] A description is made of the technology for applying foam plastic of brand FPB to pipelines used by the trust "Tyumengazmontazh." The economic effect from using the pipelines insulated with FPB as compared to using bitumen claydite is R 1 million. 2 illustrations.

UDC 621.643.001.24

DETERMINATION OF LOADS INFLUENCING PIPELAYERS IN LAYING PIPELINES

[Synopsis of article by Yu. A. Dudoladov and V. G. Sharonov, pp. 37-38]

[Text] An algorithm is developed, analytically and practically verified which takes into consideration the comparability of the bending rigidity of the pipeline and the rigidity of its supports which makes it possible to calculate more reliably the stresses developing on the boom of the pipelayers. It is expedient to use the method in calculating pipelines made of concretized, multiple layer pipes and pipes with thick walls.

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SYNOPSES OF ARTICLES IN 'CONSTRUCTION OF PIPELINES', MAY 1982

Moscow STROITEL'STVO TRUBOPROVODOV in Russian No 5, May 82

UDC 621.643.002.2+331.876.4

INTENSIVE FRONT OF THE FIVE-YEAR PLAN

[Synopsis of article pp 2-3]

[Text] An examination is made of the socialist competition at the central pipeline construction sites of the Five-Year Plan, competition in honor of 1 May, as well as participation of the collectives of the Ministry of Construction of Oil and Gas Industry Enterprises in the movement for a worthy meeting of the 60th anniversary of the formation of the USSR. Tasks are covered of the trade union organizations in the sector to improve efficiency in quality of construction, improve working and living conditions of the builders.

UDC 621.643/553.002.2+658.5

TASKS OF INTRODUCING SCIENTIFIC ORGANIZATION OF LABOR

[Synopsis of article by N. P. Firsa, pp 9-10]

[Text] The need is shown for changing the zone of servicing of construction organizations of the scientific research station of the center of scientific organization of labor "Neftegazstroytrud." Measures are presented which are aimed at expanding the sphere of introduction of scientific organization of labor. Basic trends for improving the economic mechanism in line construction adopted for the Center of Scientific Organization of Labor and the Scientific Research Center for the 11th Five-Year Plan are presented.

UDC 624.09.073-412

UNIFIED SOLUTIONS OF SURFACE OBJECTS

[Synopsis of article by N. M. Belkin and M. G. Taygunov, pp 11-12]

[Text] Descriptions are provided for new planning solutions for compressor stations which guarantee drastic reduction in the total outlays for their construction. The volumetric-planning solutions are based on schemes of the general plans of the compressor station with units GTU-10,GTK-10-4. The identity of schemes of general plans is attained by a new design of the shop with units GTK-10-4 without service auxiliary additions. It is shown that the next stage in developing the industrial solutions to compressor station facilities must be the creation of projects for compressor shops in individual coverings for all types of GPA.

UDC 621.643.002.2(571.1)

CRITERIA FOR EFFICIENCY OF ANCHOR DEVICES IN PIPELINE CONSTRUCTION

[Synopsis of article by A. K. Arabskiy and V. V. Postnikov, pp 17-18]

[Text] An examination is made of the relationship between the volume of ground operations and overall dimensions of ground anchors. An analysis is made of the interrelationship of the power of machines for submerging anchors with their overall dimensions. The influence of overall dimensions of the anchor devices on the outlays of materials for their manufacture is determined. Based on the derived relationships, criteria are defined for the efficiency of anchor devices. 2 illustrations.

UDC 621.643.002.2/502.7

EFFICIENCY OF ENVIRONMENTAL PROTECTION MEASURES IN CONSTRUCTING MAIN PIPELINES

[Synopsis of article by I. P. Novikov and L. D. Shor, pp 19-21]

[Text] An analysis is made of different aspects of comprehensive measures for environmental protection in construction of main pipelines. It is noted that at the stage of planning it is necessary to use more widely the materials of aerial photography and special maps for the conditions of construction. The need is shown for developing special environmental protection measures, substantiation of the volumns of capital outlays for conducting them, the expediency of determining the precentage participation of the related departments in construction and operation of facilities promoting protection of the environment. 3 illustrations.

UDC 621.643.002.2

LARGE COMPREHENSIVE LINES, THE BASIS FOR HIGH-SPEED CONSTRUCTION OF MAIN GAS PIPELINES

[Synopsis of article by V. I. Gushchin, pp 23-26]

[Text] A detailed examination is made of the structure of a large comprehensive line in the Transcaucasus administration of pipeline construction which during 1980-1981 guaranteed construction of 140 km of pipelines of large diameter. Organizational principles and technology for fulfilling the work are described. Data are presented on the number of workers in the line, machine supply, fund equipping of the work of the builders. The national economic effect from high-speed construction of gas pipelines is defined. 2 illustrations.

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PIPELINES

SYNOPSES OF ARTICLES IN 'CONSTRUCTION OF PIPELINE', JULY 1982

Moscow STROITEL'STVO TRUBOPROVODOV in Russian No 7, Jul 82 p 32

UDC 621.643/553.002.2+62.001.7

PROGRAM FOR IMPROVING THE LEVEL OF INTENSIFICATION AND EFFICIENCY OF THE CONSTRUCTION INDUSTRY

[Synopsis of article by B. Ye. Shcherbina, pp 2-7]

[Text] Tasks are covered of the sector in light of the decree of the CPSU Central Committee "Work of the Ministry of Construction of Oil and Gas Industry Enterprises for Mechnical Re-equipping and Introduction of Progressive Methods of the Construction Industry." Basic conclusions of the sector program are examined in the area of mechanization and automation of production processes for building the line section of main pipelines, surface objects of oil and gas industry. A lot of attention is focused on questions of improving the quality of construction, development of new types of pipeline transport. Tasks are defined for the sector to improve organization and control of construction, and social development of production collectives.

UDC 331.875.1.004.67

IMPROVEMENT IN THE USE AND REPAIR SUPPORT OF EQUIPMENT, A MOST IMPORTANT TASK OF ORGANIZATIONS AND ENTERPRISES IN THE SECTOR

[Synopsis of article by G. A. Arendt, pp 10-11]

[Text] The growth in power available per productive worker is shown in the oil and gas construction. The available reserves for improving the use of equipment are examined. Progressive methods are presented fpr repair support requiring broad dissemination. It is shown that fulfillment of the presented measures for further improvement of the use and repair support of equipment will promote a growth in efficiency of construction.

UDC 621.643/553.002.2+331.875.1

CREATION OF NEW EQUIPMENT FOR RE-EQUIPPING THE SECTOR

[Synopsis of article by Ye. P. Kovalev, pp 12-14]

[Text] A description is provided for machines, mechanisms and equipment currently used for construction of pipelines of diameter 1420 mm designed for working pressure of 7.5 MPa. The need is shown for further improvement in the design of machines. New developments are examined for creating swamp-going equipment, excavating and insulation-laying machines.

UDC621.643:621.791

WAYS TO IMPROVE THE LEVEL OF MECHANIZATION OF WELDING OPERATIONS IN BUILDING PIPELINES

[Synopsis of article by O. M. Serafin and Yu. F. Losev, pp 14-16]

[Text] Basic measures are examined which have been taken by the Ministry of Construction of Oil and Gas Industry Enterprises to reduce labor intensity of welding-installations, mechanization and automation of welding operations for construction of the line part of main pipelines. Design features of the units are described for electric-contact and automatic welding of butt-joints of pipes by powder wire. Technology and organization of welding-installation operations are presented with the help of complexes "Sever-1" "Styk." Problems are examined of welding thick-walled pipes in field construction. Paths are outlined for improving the technological readiness of the welding equipment, measures for training the welders and operators to work on the new equipment.

UDC 621.643/553.002.2+62.001.7

SCIENTISTSOF THE VUZ-SECTOR

[Synopsis of article by V. L. Berezin, pp 18-20]

[Text] The basic aspect of cooperation between the Moscow Institute of Petrochemical and Gas Industry imeni Academician I. M. Gubkin and the organizations of the Ministry of Construction of Oil and Gas Industry Enterprises is aimed at accelerating scientific-technical progress in the oil and gas construction. New methods are examined of excavating-laying operations, ballasting and fastening pipelines on swamps. The possiblity is shown of constructing junctions of pipelines under roads by the method of horizontal vibration-impact tunneling, piling operations by the method of impact pumping. Results are presented of a number of studies in the area of organizing construction, automated planning and other developments.

UDC 624.09.073-412(571.1)

INTRODUCTION OF SET-BLOCK METHOD AT SIBERIAN CONSTRUCTION SITES

[Synopsis of article by V. P. Smirenko, p 21]

[Text] Basic measures are presented for organizational-technological preparation of production fulfilled by the trust Orgtekhstroy at facilities of the association "Sivkomplektmontazh." The introduction of a computer into the practice of controlling construction, methods of combined assembly of enlarged assemblies of technological pipelines, transportation plans for shipping freight, creation of resources of mechanization and automation of labor-intensive processes are examined. Measures are covered which are conducted by the trust for propaganda of the leading production experience.

UDC 624.09.073-412/658.5

IMPROVE ORGANIZATION OF CONSTRUCTION OF SET-BLOCK FACILITIES

[Synopsis of article by S. M. Sivash, pp 22-23]

[Text] A system is presented for organization of construction production for erecting objects of the oil and gas industry in the set-block design. The value of the technological specialization of construction-installation organizations, introduction of the method of brigade contract which is an important factor for improving labor productivity and efficient use of work time is noted. The suggested structure of control of construction of the object is presented and the rules and duties of the contractors are examined.

UDC 69.033/656.073

SELECTION OF TRANSPORTATION VEHICLES FOR SHIPPING LARGE-SIZED BLOCK-SET DEVICES

[Synopsis of article by G. V. Rastorguyev, pp 23-24]

[Text] Basic plans are presented for shipping block-set devices to the site of installation by water and truck transport. Basic designs are presented for the working part of the transportation vehicles. It is noted that the use of caterpillar-track transport devices makes it possible to reduce the specific pressures on the ground to 0.1 MPa. The need is shown for orienting the designers on creation of vehicles capable of fulfilling not only transportation, but also loading-unloading operations.

UDC 621.643/553.002.2+371.876.4

COMBAT TASKS OF THE YOUNG BUILDERS

[Synopsis of article by D. S. Shokin, pp 24-26]

[Text] Materials are generalized from the 19th Komsomol Congress on questions of patronage of the Komsomol of the most important construction sites in the five year plan. The great contribution of the young builders of the Ministry of Construction of Oil and Gas Industry Enterprises to fulfillment of the fuel and energy program of the country is noted. Especial attention is focused on the practice of the Lenin Komsomol to form all-union shock worker teams and their sending to the shock-worker construction sites. The experience of work of the Komsomol-youth collectives from the trust Urengoy-Gazstroy, Severgazstroy, Tyumengazmontazh, Megiongazstroy, and the association "Sivkomplektmontazh" is covered. The outlook for participation of the Komsomols and young people in constructing the central constrution sites of the five-year plan, the West Siberia-center of the country system of gas pipelines is outlined.

UDC 621.643.002.2(571.1)+331.876.4

BY A COURSE OF INTENSIFICATION

[Synopsis of article by N. I. Kurbatov, pp 27-28]

[Text] The contribution of Glavsibtruboprobodstroy to implementation of the country's energy program is noted. The outlook for development of production facilities of the central board for successful fulfillment of the increased volumns of pipeline construction in West Siberia are outlined. Specific organizational and technological measures are presented which promote improvement of the quality of the work done, decrease in its labor intensity. Attention is focused of the contribution of the leading production collectives to solving primary tasks of the sector.

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25
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CONTENTS

FUELS

COAL

Coal, Power Ministers Respond To Criticism of Kuzbass Development
(PRAVDA, 10 Oct 82) 1

Ukrainian Coal Ministry Reviews Letters From Miners
(G. Ganul-Polishchuk; PRAVDA UKRAINY, 19 Sep 82) 3

Local Control of Mine Expansion Sought
(V. Bobrov; SOTSIALISTICHESKAYA INDUSTRIYA, 7 Sep 82) 9

Sredazugol' Association Reports Progress
(N. Pletnev; SOVETSKAYA KIRGIZIYA, 18 Sep 82) 12

Problems With Gas Pressures Examined
(I. Grigor'yev; PRAVDA UKRAINY, 19 Sep 82) 13

Briquetting Process Yields Cheap Heating Fuel
(Ya. Opman; SOVETSKAYA BELORUSSIYA, 23 Sep 82) 15

Neryungri Mining Complex Growing
(V. Yermolayev; PRAVDA, 7 Sep 82) 17

Briefs
- New Tunneling Combine 19
- Coal Mining Record 19
- Mine Fire Extinguisher 19
- Extra Coal Mined 20
- Heat From By-Product Methane 20
- Mining Quota Surpassed 20
- Two-Year Mining Quota 20
- Coal Trains 20

Half-Million Tons of Coal 21
"Yubileynaya" Mine Record 21
Mine Cable Cars 21

PIPELINES

PIPELINE CONSTRUCTION

Construction Deputy Minister Interviewed on Gas Pipeline Progress
(A. Vesel'yev Interview; SOVETSKAYA ROSSIYA, 5 Oct 82) 22

Economics Institute Determines Pipeline Routing
(A. Favorskaya; SOVETSKAYA ESTONIYA, 10 Sep 82) 24

Preparation To Lay Pipeline Across Volga Underway
(R. Valeyev; KOMSOMOL'SKAYA PRAVDA, 19 Sep 82) 26

Ex-Servicemen Help Build Gas Pipeline
(Ye. Sorokin; KRASNAYA ZVEZDA, 18 Sep 82) 28

Tsivilsk Section of Gas Pipeline Is on Schedule
(S. Yevgen'yev; KRASNAYA ZVEZDA, 5 Sep 82) 33

Pipeline Construction Begins Near Okhochevka
(A. Shchiglenko; SOVETSKAYA MOLDAVIYA, 19 Sep 82) 35

Briefs
Equipment Aids Pipeline Progress 37
Pipe Haulers Shipped 37
Pipeline Plant Under Construction 37
More Pipe Laid 37
Gas Cleaning Pumps Shipped 38
Support to Gas Pipelines 38
More Pipe Laid 38
Equipment From Armenia 38
Gas Pumps for Pipeline 38
Pump Consignment for Pipeline 39
Ivatsevichi-Dolina Pipeline Operational 39
Pipe Welding Base Completed 39
Gas Pipelines Cross 39
Pumping Station Finished Early 40
Air Cooler Motors 40
Pipeline Operator Training 40
Pipeline Crossing Volga 41

COMPRESSOR STATIONS

Sverdlovsk Manufactures Parts for Pipeline
(N. Pozhidayeva; STROITEL'NAYA GAZETA, 26 Sep 82) 42

Perm Oblast Contributes to Pipeline
(V. Cherapanov; PRAVDA, 10 Oct 82) 44

Shafts for GTN-25 Gas Pumping Unit Finished
(O. Rogozin; KOMSOMOL'SKAYA PRAVDA, 9 Sep 82) 46

RELATED EQUIPMENT

Pipe Cleaning, Insulating Machine Shipped to Urengoy
(O. Berkutov; LENINGRADSKAYA PRAVDA, 7 Sep 82) 48

Kirovakan Supplies Instruments to Gas Pipeline Ahead of Schedule
(N. Mesropyan; KOMMUNIST, 1 Oct 82) 51

Cheboksary T-330 Tractors Satisfy Construction Needs
(N. Osipov; LENINGRADSKAYA PRAVDA, 17 Sep 82) 53

GENERAL

KATEK Administrative Problems Described
(A. Prigodich; STROITEL'NAYA GAZETA, 25 Aug 82) 55

'IZVESTIYA' Economic Observer Reports From New Urengoy
(V. Romanyuk; IZVESTIYA, 6 Sep 82) 59

Housing for Pipeline Builders Described
(A. Gil'ts; SOVETSKAYA KUL'TURA, 7 Sep 82) 64

Experimental Boiler Plant Described
(A. Alekseyev; SOTSIALISTICHESKAYA INDUSTRIYA, 13 Aug 82) .. 66

COAL, POWER MINISTERS RESPOND TO CRITICISM OF KUZBASS DEVELOPMENT

Moscow PRAVDA in Russian 10 Oct 82 p 2

[Article: "'Kuzbass Coal'"]

[Text] That was the title of an article published in PRAVDA on 30 June and 1 July of this year. It raised the problem of developing the fuel base of the Kuznetsk Basin. As was reported to the editorial board by USSR Minister of Coal Industry B. F. Bratchenko, the ministry's governing board examined the problems of the Kuznetsk Basin's work and took steps to correct the revealed shortcomings. The coal extraction plan for the first half of the year was completed by all of the basin's production associations. There is confidence that the annual program will also be completed as a whole.

Fuller provision of new mechanized complexes to the mines has been foreseen. The Scientific Research, Planning and Design Institute of Coal, located near Moscow, is developing a machinery complex capable of mining seams up to 5 meters thick. This year, coal machine building plants have started producing complexes to work thick seams--new combines.

Proposals are being drawn up for developing and expanding the functions of the "Gidrougol'" Production Association. The plans include transforming it into the main association for development of hydraulic coal mining in other production associations located in eastern regions. The mining of coal by this method in the Kuznetsk Basin will increase from 5.6 to 7.4 million tons in the five-year plan.

At the same time the capital investment limits set for the five-year plan will not completely support the required development in the Kuznetsk Basin. Coal mining capacities are being placed into operation late, and coal machine building, the sector's repair base and the production base of the construction organizations are developing too slowly.

In this five-year plan more than 2 million square meters of housing, children's preschool institutions with a capacity of more than 8,000 children and number of cultural and personal service facilities are to be placed into operation in the Kuznetsk Basin. The "Kuzbasszhilstroy" Combine is to place 338,000 square meters of housing space into operation for workers of coal industry and other clients this year. In the first half of the year, it completed 136,400 square meters--130 percent of the amount planned. But the quota for the total volume of construction and installation has been only 85 percent completed.

Measures aimed at improving the material and technical support to house building plants and at eliminating the associated bottlenecks have now been developed and are being implemented. Reconstruction of the Tomusinskiy Woodworking Combine is to be completed in 1983.

The questions raised in the article were additionally examined during further work on the draft state plan for economic and social development of coal industry in 1983.

As was reported to the editorial board by USSR Deputy Minister of Power and Electrification V. A. Lukin, the article properly raised the issue of developing centralized heat supply in Prokopyevsk and Kiselevsk. The "Plan for Suplying Heat to the Cities of Prokopyevsk and Kiselevsk in 1990" drawn up in 1980 by the Siberian department of the VNIPIenergoprom [not further identified] institute foresees construction of a new Prokopyevsk -Kiselevskaya TETs, expansion of the existing boiler plants and construction of new regional boiler plants.

11004
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UKRAINIAN COAL MINISTRY REVIEWS LETTERS FROM MINERS

Kiev PRAVDA UKRAINY in Russian 19 Sep 82 p 2

[Article by PRAVDA UKRAINY Special Correspondent G. Ganul-Polishchuk: "Grounds for Concrete Measures: An Analysis of Work with Letters From Laborers in the Ukrainian SSR Ministry of Coal Industry"]

> [Text] Let us begin with an excerpt from my final interview with the republic's deputy minister of coal industry, A. Z. Astrakhan.
>
> Question: What is the Ukrainian SSR Minugleprom [Ministry of Coal Industry] like today?
>
> Answer: It is the headquarters of the republic's coal industry, consisting of 29 administrations, sections and subsections. The ministry has production associations subordinated to it--24 in coal extraction, 3 in coal processing and 2 in repair of mining equipment. It also possesses scientific research and planning institutes. The party and government constantly devote enormous attention to our sector, and provide help to it.
>
> Question: Who in the ministry reads letters from the laborers?
>
> Answer: Everyone--from the minister and his deputies down to the letter group of the legal section, the staff of which includes a senior engineer and a complaints engineer. It sounds a little odd, doesn't it--complaints engineer? We call him an engineer because he must deal constantly with the computer center, where all of the information on the mail traffic is processed.

Conquering the Coal Seams

When Minister N. K. Grin'ko visited the "Krasnoarmeyskugol'" Association's "Krasnolimanskaya" mine, he was approached by V. I. Ignat'yev, leader of a brigade of stope miners:

"I've been meaning to see you, Nikolay Konstantinovich. We have this problem: To work the seams, which are 2.3 meters thick, we need a new '1UKP' complex, which I know recently passed its tests successfully in the Kuznetsk Basin."

To be truthful, the minister hears various sorts of questions about new equipment all the time. But V. I. Ignat'yev's proposal was significant to his operation. Therefore a decision was made to hasten manufacture of the new complex in Druzhkovka.

This discussion between the worker and the minister occurred last summer. The complex was ready by the end of the year, and it was shipped to the mine this last January. Even during the tests Ignat'yev's brigade achieved outstanding results. And in August it reached an output of up to 4,500 tons of fuel per day.

Thousands of letters and hundreds of visitors come to the Ukrainian SSR Minugleprom every day. Besides requests of a personal nature, the letters often contain proposals, wishes and recommendations on fuller use of the coal mining reserves.

"Last year one out of every 12 laborers in the republic's coal industry took part in efforts to make production more efficient," said A. F. Ostapenko, chief of the technical administration. "For example during testing of the new '1KM-103' complex for thin seams at the 'Miusskaya' and 'Yasinovskaya' mines, workers and specialists made so many improvements that it became possible, for the first time, to fully mechanize extraction of coal from thin gently sloping and inclined seams without having to cut through wall rock."

Miners are troubled by the cases of idleness that still occur. Workers of Mine No 12 of the "Donetskugol'" Association's "Krasnaya Zvezda" Mine Administration once wrote a letter stating that they were not to blame for the fact that the section was always falling behind: "After the mining complex was sent out for repairs and returned we have been able to mine only 170-280 tons per day, as opposed to the planned 340 tons. Much time is spent on repairs. The cost of repairs has already exceeded the cost of the complex itself.

An inspection verified the facts. The enterprise was then given a "KM-87-13" complex that was working well and now things are humming along. At the ministry, meanwhile, the problem was found to be a general one. For example the issue of placing orders for spare parts for mine equipment required by 140 of the republic's enterprises was recently resolved.

Growth in the number of proposals by miners for improving production convinced ministry executives that a special order had to be published: "On Examination of Issues Raised in Letters From Laborers Concerning Improvement of the Work of Different Units of the National Economy." A little while later, the progress at fulfilling the requirements of this order was analyzed, and the positive experience was generalized.

The Miner's Life

Consider the settlement beside the Mine imeni Abakumov. More than a settlement, it is something closer to a city! It was not that long ago that the first inhabitants celebrated their housewarming in three houses built with resources available locally. Now there is a 100-apartment building for young newlyweds. There is an outstanding dormitory. Obtaining loans and construction materials, many miners are erecting their own homes.

Thus no one from this enterprise ever writes letters of complaint. There is a special microclimate here at the Avakumov mine. It is because of these conditions that letters addressed to the ministry and the editorial board contain nothing but statements of sincere gratefulness. Particularly letters from new mine workers.

As an example a young lad once came to work here at the mine after the army. He received space in the dormitory without any waiting at all, and he did not have to pay back the financial moving-in assistance he was given. Extra pay for time served is added to the wages in just a year of underground work. Heating fuel is free. Hot food costs just kopecks. There is a fabulous vacation base on the Sea of Azov. As a material incentive, each year 30-40 persons may purchase a motor vehicle without waiting for their turn on a waiting list. Hero of Socialist Labor V. N. Pikhterev provides a good example: He rides in a "Moskvich" which he received as a prize from the Exhibition of the Achievements of the USSR National Economy.

The ministry's mail bag understandably contains letters of different kinds--both those written by people satisfied with a miner's fate, and those written by people abandoning this land, having been scared away by the difficulties. The task is to encourage more new volunteers to come here: The country needs coal, and there are not enough working hands. This would be a good point to say some kind of words about the unity of action displayed by the Central Committee of the Ukrainian Komsomol and the republic's Ministry of Coal Industry which, by their joint decisions, efficiently organized the travel and reception of young people going to the Donets Basin on Komsomol passes. The ministry generalized the experience of ideological work conducted at the Mine imeni XXVI S"yezd KPSS ("Pavlogradugol'" Association) where, in particular, sponsorship has been set up in exemplary fashion.

Nevertheless the ministry receives more letters of complaint than letters of gratefulness concerning a miner's life. The lion's share of these complaints concern the administration for communal housing and personal services. The causes behind the complaints were analyzed. The main one is that the plans for overhaul of residential buildings were not being fulfilled. Each year the production associations failed quotas they themselves had set. No one was essentially held responsible. Now the ministry publishes an expanded order containing quotas to be satisfied in the five-year plan by the communal housing service of each mine. Moreover the letter indicates firm deadlines, for which executives are held no less responsible than for coal extraction quotas. Here are the first results: Last year, while overhaul of 712,000 square meters of living space was planned, 718,000 square meters were finished, and in the first half of the present year 287,100 square meters were overhauled, as opposed to the 275,000 square meters planned.

Mention should be made of the fact that each year the governing board of the Ukrainian SSR Minugleprom makes decisions jointly with the oblast executive committees on making improvements on miner's cities and settlements. Such joint decisions have been made, for example, with Donetsk and Voroshilovgrad oblast executive committees. Concrete measures are being drawn up, indicating what jobs are to be done when, where and by whom, be it asphalting the sidewalks, working on electric lighting, installing gas supply lines or creating children's playgrounds. Owing to such joint efforts the amount of energy being contributed has doubled, and control over fulfillment of adopted decisions is clearer.

Computers Help

One of the ministry employees admitted: "I wince every time someone places a tape from the computer center on my desk with a reminder of the deadlines for reviewing letters."

Such tapes are being continually delivered to all administrations as well as to the letter group of the legal department, where the data are analyzed and information is compiled as a guideline for action. Each quarter the computer center provides an accurate picture of the trends in the mails. And what is very important is that the computer is able to reveal where things have gotten better and where things have gotten worse. The ministry employees pore over the data and hasten to make the correct conclusions, so that action could be taken from knowledgeable grounds.

For example last year there was a noticeable increase in the number of letters connected with raising and improving the wages of coal industry workers, as foreseen in a decree published by the CPSU Central Committee and the USSR Council of Ministers. This mail contained many statements of thanks to the party and government for their concern for the miners. N. Kholostykh, a well known miner employed by the Mine imeni Dzerzhinskiy who completed his quota for the 11th Five-Year Plan back in June, reported in a telegram to the ministry that he had reviewed his pledges and decided to complete another annual quota by the 60th anniversary of the USSR. Because of the numerous inquiries made concerning the new wages, the ministry organized around-the-clock shifts for specialists on state standards at every mine, and it created consultation offices. Office hours are now held for laborers locally, at remote miners' settlements, and open letter days are held.

The computer also revealed that many complaints were being submitted to the ministry by way of higher organizations. What was wrong?

Here is a case history. Two years ago N. Ponomarchuk, a veteran of the Great Patriotic War, asked the chief of the production-technical communications center Ya. Ruban ("Aleksandriyaugol'" Association) to install a telephone. But the latter refused "because it was impossible." However, seeing that telephones had been installed at the places of work of his neighbors in the course of the 2 years, Comrade Ponomarchuk wrote a higher authority, requesting that his situation be straightened out. Of course, steps were taken and the chief of the communications center was punished.

Such cases only confirm that if every petition of the laborers is examined locally with due attention and justice, people would not appeal to other organizations. However, there are also times when requests are made inopportunely: At such times the individual should be promptly notified as to the reason for postponement or rejection.

What else does the computer tell us? Many of the letters are written about mismanagement and abuses. The ministry analyzes these letters and takes the proper steps. But here is what happens when individual cases are not properly handled.

At the end of last year the newspaper TRUD sent a warning to the ministry in behalf of the workers that V. Shkuratov, a shift chief at the "Proletarskaya" Central Concentrate Factory of the "Donetskugleobogashcheniye" Association, was using publicly owned materials to build a garage for himself. The ministry made inquiries in the association. General director V. Kochetov replied: "Enclosed is a memo on our inspection of the facts...." Besides the memo from the inspectors and the extremely naive explanation given by V. Shkuratov himself, no conclusions were made from this incident. Thus we find that a complaint is confirmed but everything remains as before.

In a word, the computer provides the coaching, the information is discussed at meetings of the governing board, orders are published, and semiannual reports providing a detailed, illustrated analysis of the mail are submitted to subordinated associations for action. What happens next? Analysis of individual documents has shown that no constant control over whether or not measures are being implemented by the associations is being exercised.

Of course different associations display different attitudes toward cases of red tape and formalism in work with letters from laborers. For example last year 26 workers were disciplined and 2 were dismissed from their positions in "Donetskugol'." Last year the association published several strict orders regarding the associated infractions.

Meanwhile other associations such as "Donbassantratsit" and "Antratsitugleobogashcheniye" do not feel that a superficial approach to examining requests from laborers is an infraction of any kind. In any case the replies they send to the ministry have nothing to back them up.

There are also some shortcomings in the approach taken to letters within the ministry administration itself. Having listened to reports on the work done with petitions from the laborers, the party committee did the right thing by holding these executives personally responsible for executive discipline. After all, the quantity of repeat letters could hardly be said to be decreasing. Administrative employees are still not doing enough to check up on complaints locally.

As we are required to do so by the CPSU Central Committee decree "On Measures for Further Improvement of Work With Letters and Proposals From Laborers in Light of Decisions of the 26th CPSU Congress," we must continue to deeply study the content of letters and make competent use of the obtained information in our practical work.

Here is one observation that can serve as an example: The quantity of petitions sent by laborers to the ministry almost doubled in one of the recently created associations. What were the laborers writing about? What is troubling them? And what steps can be taken right now?

Thought is being given to these questions in the ministry. And the miners will receive complete replies and help locally. And this will increase their strength tenfold. And the work will be more pleasant. The hard labor of people mining coal is so greatly needed by the country.

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COAL

LOCAL CONTROL OF MINE EXPANSION SOUGHT

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 7 Sep 82 p 2

[Article by special correspondent V. Bobrov: "Who is to Deepen the Mine?"]

[Text] In January 1981 the total output capacity of enterprises belonging to the All-Union "Kuzbassugol'" Industrial Association was 103.5 million tons. A year passed, and the miners estimated with alarm that their output capacity had dropped to 102.7 million tons. One of the main reasons was a delay in preparing the explored coal reserves for mining.

For the Kuznetsk Basin, which has enjoyed a rather high rate of increase in the volume of underground extraction over a period of many years, this trend is not normal. It is a consequence of a serious mistake in the upper levels of administration.

It was once believed that the "Kuzbassshakhtostroy" Combine would assume the responsibility of all construction at coal enterprises. But it is one thing to build a new mine, to dig a shaft and to erect an administrative-personal service combine, since the capital investments are sizable and there is room in which to work. But it is a totally different thing to build all of the various additions and other facilities of similar scale.

Many thousands of them are accumulating in the basin, and the production organism cannot develop normally without them. Like it or not, all of these "small" facilities have to be built.

Experience has shown that mine builders are not in a position to do all of these jobs. This is why the mine association has started creating mine building trusts, capital construction departments and major mining operation sections.

Because "Kuzbassshakhtostroy" dispersed its efforts over many hundreds of facilities, the already unsatisfactory pace of reconstruction dropped even more. Of the 68 mines and mine administrations belonging to the All-Union "Kuzbassugol'" Industrial Association, 29 are being rebuilt. This includes 17 that have been under reconstruction for more than 10 years. The "Abashevskaya" mine holds a unique sort of "record," having been under construction for 22 years. And what is most saddening is that when the reconstruction is finally completed, there will no longer be anything left to mine.

We cannot but agree with the opinion ventured by Hero of Socialist Labor V. Yerpylev, a USSR State Prize laureate, director of "Nagornaya" mine and a well-known specialist:

"There is no objective way," Viktor Mikhaylovich believes, "to determine who is to do the rebuilding and when. Today much depends on who shouts louder than everyone else...."

On one hand many tens of millions of rubles are spent on totally unpromising reconstruction in the basin. On the other hand 31 mines do not have any coal reserves of the operating horizons, and instead they are either working the reserves of neighboring mines or mining sloping seams on a temporary basis. The All-Union "Kuzbassugol'" Production Association mines almost half of its coal from sloped seams, while the "Leninskugol'" Production Association mines 84.7 percent from such seams. What this can lead to is described by G. Kassikhin, the deputy chief for construction at the all-union production association:

"Reserves mined from horizons undergoing reconstruction are treated as part of the old output capacity. And therefore when reconstruction is finished, we do not enjoy the expected growth in output. Thus we begin a process of writing off output capacities that do not exist."

At the same time examples of a different sort can also be found in the basin. G. Kharitonov, director of the Mine imeni 7 Noyabrya (presently general director of the "Leninskugol'" Association) organized reconstruction on his own, deepening the shaft with his own resources. In this case the reserves were increased by tens of millions of tons. The stable operation of the "Alardinskaya" and the imeni V. I. Lenin mines and of the "Fizkul'turnik" Mine Administration is also based on the self-help method of supporting the output capacities of the enterprises. Local resources are being used to further construction at the "Kol'chuginskaya," "Oktyabr'skaya," "Polysayevskaya," "Kuznetskaya" and "Pionerka" mines. But this is often done not entirely legally. This is why whenever the discussion turn to the sources of financing, the people I interviewed often tried to shift the discussion to another topic.

But all of them--mine directors and association general directors--were unanimous in the opinion that the work of maintaining the output capacities should be placed under the responsibility of the miners themselves. Almost all of them cited the experience of those coal enterprises in the Kuznetsk Basin where the executives used their own initiative to rebuild their enterprises, at their own risk, and managed not only to maintain but even increase their output capacities.

Moreover it is hardly ever possible to achieve the end goal when reconstruction is done by contracting organizations. There are sufficient examples of this. According to the plan, "Sudzhenskaya" mine was supposed to increase its mining capacity to 1.8 million tons at a productivity of 75.5 tons per worker per month following reconstruction. The capital investments were even greater than foreseen by the estimate. But the indicators turned out to be more than a third worse than foreseen.

The question begs itself: What sense is there in reconstruction costing many millions but resulting in a decline in extraction level and labor productivity? How can we talk about the effectiveness of capital investments when the money is spent without any sort of return?

As the time of reconstruction increases, its cost necessarily grows, and very considerably at that. The planning concepts go obsolete. That which was believed to be progressive 10-15 years ago often ends up obsolete by the time it is implemented. Today the mine builders do not have a practical interest in the end result--a completed facility built at a modern level. Once they are unable to complete their work within the standard time, they loose their bonus for early completion. And once this is so, what difference is it to them whether it takes them 5 or 10 more years to finish the work? As the situation is now, the contracting organizations get the most profit from projects involving large capital investments. This is why they make no attempt to reduce the cost of construction.

Incidentally, miners usually refer to the operations associated with preparing new reserves for mining not as reconstruction but as "deepening." This term reflects the nature of the work done much more precisely. As the coal reserves of a prepared horizon are mined out, preparations must be started to work lower beds--that is, the mine has to be dug deeper. At such times a mine may also often be given the task of increasing its output capacity by improving its procedures and introducing more-productive equipment. The point of view of specialists who believe that "deepening," even if it means an increase in output capacity, should be treated as part of the production process performed by the miners themselves deserves attention. This concept is advantageous primarily because it completely eliminates the conflicts that unavoidably arise in the mutual relationships between contractor and client.

Many experienced administrators believe that this would make it possible to surmount, in minimum time with minimum outlays, the decreasing trend of underground coal mining volume in the Kuznetsk Basin. After all, mines do provide the bulk of the coking coal. We must hasten preparation of new reserves to replace those that are paying out. The USSR Ministry of Coal Industry must obviously make an attentive analysis of the experience that has been already accumulated by enterprises of the All-Union "Kuzbassugol'" Production Association so that it might make an effective decision on this issue.

11004
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SREDAZUGOL' ASSOCIATION REPORTS PROGRESS

Frunze SOVETSKAYA KIRGIZIYA in Russian 18 Sep 82 p 3

[Article by Kirghiz Press Agency Correspondent N. Pletnev: "Miners' Horizons"]

[Excerpts] "Coal extraction from the open pit will constantly grow," said Yu. P. Tolmachev, chief process engineer of the "Sredazugol'" Production Association, to this Kirghiz Press Agency correspondent. "A self-contained drilling rig and a powerful bulldozer intended for work on the terraces have just arrived. We are awaiting an EShA-10/70 walking excavator and several 70-ton BelAZ trucks."

But of course the main hopes are being laid on reconstruction of the "Almalyk" open-pit mine. It will be responsible for increasing local coal extraction by almost a third. And the reserves of this coal are great--there is enough coal for 40 years of work. Renovation of the enterprise will begin at the end of the present five-year plan. Specialists that will be preparing the reconstructuion plan have already arrived at Osh.

The year of the 60th anniversary of the USSR's formation has become especially productive for "Almalyk" miners. Having assimilated the new equipment, they managed to significantly accelerate the progress of stripping operations and raised labor productivity by 2.5 percent in the course of their shock watch. In 8 months they shipped four 1,000-ton railroad trains of fuel in excess of their quota. The count of tons in excess of the plan continues to grow.

11004
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PROBLEMS WITH GAS PRESSURES EXAMINED

Kiev PRAVDA UKRAINY in Russian 19 Sep 82 p 2

[Article by Candidate of Technical Sciences I. Grigor'yev, general director, "Voroshilovgradugol'" Production Association, Lenin Prize laureate: "Surmounting Ground Pressure"]

[Text] As the depth of coal mining increases, miners encounter difficulties having an influence not only fulfillment of the job but also on the working conditions. The preparatory mining operations must be performed in gas-saturated, stressed rock.

Ground pressure increases with depth, and weak rock cannot hold up to drift tunneling. This is why drifts are tunneled in strong rock that is most resistant to ground pressure--sandstone. But even this rock has its weakness. It is saturated with gas, it is under high ground pressure and it is capable of breaking down instantaneously. As an example more than 20 million rubles were spent to correct the consequences of ground pressure in sandstone during construction of the Mine imeni A. Skochinskiy. Work safety worsens dramatically.

Colleagues of the Makeyevka Scientific Research Institute, the Ukrainian SSR Academy of Sciences Institute of Geotechnical Mechanics, the VNIIMI [not further identified] and the Ukrainian Ministry of Coal Industry worked for more than 20 years on the problem of digging drifts at large depths in stressed, gas-saturated rock. We can say that their difficult labor has been graced with success.

The nature and mechanism of ground pressure as it manifests itself in relation to drift tunneling under these conditions were studied, the theoretical fundamentals were created, and miners received the possibility of predicting the condition and behavior of rock when tunneling drifts. The method for predicting the condition of rock on the basis of information obtained by geological exploration makes it possible to sensibly locate drifts in the most stable rock--both in the planning stage and during construction and reconstruction of mines, and to foresee creation of safe working conditions. For example consideration of such a prediction during construction of the Mine imeni Stakhanov and during reconstruction of the Mine imeni XXV S"yezd KPSS made it possible to get coal mining operations operating promptly, to reduce construction costs and to raise the safety of the mining operations. Drifts are now being tunneled successfully by safe and productive processes--ones not requiring blasting (combines are used) and ones involving preliminary relief of rock stresses.

The brigade led by Hero of Socialist Labor V. D. Tikhorskiy at the Mine imeni XXV S"yezd KPSS, which uses a method not requiring blasting, tunnels 100-120 meters of drifts per month, as compared to 20-30 meters with the drilling and blasting method. And the Mine imeni Pochenkov, which uses a method entailing preliminary relief of stresses in gas-saturated rock, has tunneled more than 6,000 meters of drifts to a depth of 800-900 meters in the time of its operation. This made it possible to significantly increase the stability of the drifts, to raise the tunneling rate and to reduce outlays on drift maintenance.

I believe that the book "Creation of the Theoretical Principles and Development and Introduction of a Complex of Effective Methods of Predicting the Condition of Stressed, Gas-Saturated Rock in Deep Shafts and Tunneling Drifts in Such Rock" has been duly nominated for the Ukrainian SSR State Prize in science and technology.

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BRIQUETTING PROCESS YIELDS CHEAP HEATING FUEL

Minsk SOVETSKAYA BELORUSSIYA in Russian 23 Sep 82 p 2

[Article by Candidate of Technical Sciences Ya. Opman: "Dust has Become Fu^l"]

[Text] About 2 million furnaces and boilers have been installed to heat the republic's residential buildings and communal and personal service institutions. They burn an enormous quantity of fuel, mainly peat briquettes, which are characterized by a relatively high heat of combustion, low ash content and convenient use.

The most complex and expensive process in the production of such briquettes is thermal artificial drying of cut peat before pressing. The situation has been aggravated by the fact that we have been using imported drying units for many years.

This makes the success of specialists at the "BelNIItopproyekt" [not further identified] institute, who developed a pneumatic gas-operated high-productivity dryer, all the more significant. For the first time in Soviet and foreign practice, this dryer is outfitted with simply designed devices which intensify the drying process. Such dryers are now being used by four of the republic's peat briquetting plants.

There is another development of the collective of the "BelNIItopproyekt" institute of great value. As we know, coal imported for communal and personal service enterprises contains a large quantity of so-called fines, use of which in small boilers and individual furnaces is difficult and ineffective.

Moreover a significant part of the coal fines are lost irretrievably at the warehouses. So that this would not occur, sintering (briquetting) of the coal dust and fines had to be organized. But scarce and expensive substances are required by the coal briquetting process.

Searching for a solution to the problem, the institute's scientists demonstrated that peat could play the role of the binder. The experimental research proceeded successfully. And here are the results: When 30 percent coal is added to peat, the heat of combustion of the briquettes increases by 15 percent. Moreover owing to the greater density of the peat-coal mixture in comparison with peat, the productivity of the briquette presses rises by a factor of 1.3-1.5.

The procedure for making peat-coal briquettes does not require significant changes in the plant equipment. Now this new procedure for making briquettes out of cut peat mixed with coal is being introduced at the "Berezinskiy" Plant, Minsk Oblast.

Here is another of the institute's interesting projects. A significant quantity of fuel dust forms when dried peat is briquetted. It is trapped to some extent and returned to the briquetting process. But the finest particles--up to 1,000 tons of dry peat per year--are carried away into the atmosphere. The collective of the "BelNIItopproyekt" has developed a system for burning such a dust-air mixture in an industrial furnace that generates heat to dry peat. This completely eliminates the discharge of dust into the atmosphere and simultaneously saves 10 to 20 percent of the fuel. This dust utilization system has been introduced at a number of the republic's peat briquetting plants.

11004
CSO: 1822/28

NERYUNGRI MINING COMPLEX GROWING

Moscow PRAVDA in Russian 7 Sep 82 p 1

[Article by correspondent V. Yermolayev: "The Neryungri Giant"]

> [Text] Miners and builders of the "Neryungrinskiy" open-pit mine received a new lot of rock excavators with a shovel capacity of 20 cubic meters. Of equal power to the mighty excavators are 180-ton dump trunks, working side by side with them in the quarry. This powerful equipment is helping miners of the Yakut SSR to increase the rate of coal extraction.

The planned productivity of the first generation of the open-pit mine, which was placed into operation in the year before last, has now been surpassed by a time and a half. The time has now come to begin developing the second generation, which is expected to have the same output--2.5 million tons of coal per year. In the next 2 years there are plans to introduce a third and a fourth generation of the open-pit mine, each with a productivity of 4 million tons of fuel.

"Construction of an open-pit coal mine, a concentration factory and the first generation of a GRES is to be completed in this five-year plan," said P. Fedorov, secretary of the Neryungri gorkom. "We are happy with the fact that out of all of the mineral deposits that have been discovered along the Baykal-Amur Rail Trunkline, they decided to begin mining our coal first. After the open-pit mine is in full operation coal extraction will achieve 15 million tons, and the stripping volume will attain 100 million cubic meters of rock per year. The concentration factory presently under construction will process 9 million tons of coking coal per year."

About 25,000 builders are erecting these powerful modern enterprises in the southern Yakut SSR. The city of Neryungri and the settlements of Serebryanyy Bor, Berkakit, Zolotinka, Nagornyy and Torgo are growing swiftly. A steel branch extending from the trans-Siberian station of the Baykal-Amur Rail Trunkline to Ugol'noy Station--a distance of more than 400 kilometers--has noticeably improved the Yakut ASSR's transportation link with the country's economic centers. Trains carrying machines, mechanisms, materials and various structures are now traveling directly to the construction sites. And they are now returning more and more frequently filled with fuel.

A concentration factory loading spur, a radio relay line and a 220 volt power transmission line extending from Tynda to Neryungri and connecting the autonomous republic with the Far Eastern Power System have also been placed into operation in the Yuzhno-Yakutskiy Territorial-Production Complex. The output capacity of the Chul'manskaya GRES has risen noticeably. Now that a large-panel house building plant has been placed into operation, the rate of erection of housing and of cultural and personal service facilities has risen.

Competing for an honorable welcome to the 60th anniversary of the USSR's formation, many of the creators of the territorial-production complex are significantly surpassing their shift quotas. Excavator brigade leader K. Bekeshev is in the ranks of the leaders. Machine operators in his crew--R. Aver and V. Krauze--are doing excellent work with their complex equipment. The veterans generously share their rich experience with the young workers.

"Recently our collective organized a single complex together with the crew of the adjacent excavator headed by F. Zoloto," said K. Bekeshev. "The rock is carried out by eight 180-ton trucks assigned to us. We also have our own bulldozer, which we use to keep the motor road in good condition."

The advantages of the new organization of labor are obvious. For example if one of the excavators must stop work for some reason, the other can start operating at a higher pace. As a result idleness of dump trucks can be decreased and the volume of bulldozer operations can be increased. Within a month the crews of two excavators moved 110,000 cubic meters of rock more than planned to the dumps. K. Bekeshev's crew processes up to 15,000 cubic meters of stripped rock in a single shift. The annual productivity of the machine can be increased. The machine operators say that it would be suitable to include drill operators into the composition of the complex as well. This would help improve the work of all builders and miners at the open-pit mine.

11004
CSO: 1822/28

BRIEFS

NEW TUNNELING COMBINE--Yasinovataya, Donetsk Oblast--the tunneling combines which the Yasinovataya Machine Building Plant has begun producing will hasten construction of coal mines. Tests on an experimental model of the machine conducted at one of the mines of the Donets Basin demonstrated its high operating qualities. The greater available power per unit and the special strength of the combine's structure permit it to tunnel a distance of up to 200 meters per month through hard rock. This underground "racer" has one other advantage: Its telescopic working organs make it possible to dig a tunnel with a cross section of up to 35 square meters. Such a spacious "corridor" will be needed in ultradeep mines, in which the drifts will have to be well ventilated owing to the high temperatures. A single machine operator can control the combine, which performs all operations in automatic mode--from breaking down the rock to conveying it out of the stope. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 9 Oct 82 p 2] 11004

COAL MINING RECORD--Ekibastuz-- iners of the "Ekibastuzugol'" Production Association shipped hundreds of thousands of tons more fuel than planned to power engineers. The largest contribution to this accomplishment was made by crews operating ERShRD-5000 rotary excavators. In the first year of the five-year plan the brigades led by R. Fetser and A. Shishlov, which are using the Novokramator-built machines that extract up to 5,000 tons of coal per hour, promised to raise their annual productivity to an unprecedented figure by the end of the five-year plan--10 million tons. A nationwide record has already been achieved in the rivalry between the masters. Shishlov's brigade extracted 8,172,000 tons of fuel from its stope during the year. This year R. Fetser and his comrades are closer to the 10 million mark. This expert engineer, who helped to integrate the very first rotary excavator in Ekibastuz into the production process, has nurtured a friendly and highly skilled crew. Machine operators A. Shmeyer and A. Demin and assistant machine operator S. Grefenshteyn have become true masters in their work. [by Yu. Razgulyayev] [Text] [Moscow PRAVDA in Russian 23 Sep 82 p 2] 11004

MINE FIRE EXTINGUISHER--Fire in a coal mine is the most dangerous disaster. And the threat of fire comes not only from flames: The methane-air mixture contained in mines is capable of exploding at any moment. To control fire and prevent explosions, specialists of the All-Union Scientific Research Institute of Mine Rescue have developed an inert gas generator equipped with a turbojet engine. When kerosene is burned in the engine and the combustion products are subsequently cooled with water, an inert mixture of steam and gas forms. If foam is required, the mixture of steam and gas is fed through a foam generator contained within the gas generator outfit. Such a generator can be assembled in a mine in 30-40 minutes. [Text] [Moscow SOVETSKIY VOIN in Russian No 17, 1982 p 30] 11004

EXTRA COAL MINED--Kirovograd Oblast--This year the collective of the "Aleksandriyaugol'" Production Association's Balakhovskiy open-pit mine extracted about 50,000 tons more of fuel than planned. This accomplishment was achieved owing to highly effective use of mining equipment and the efficient, well coordinated work of the excavator crews. The best results were achieved in the shock watch in honor of the 60th anniversary of the USSR's formation by machine operators I. Kravchenko and G. Perchik. Their crews have already mined 18,000 tons of coal over their quota. [by I. Bratchenko] [Text] [Kiev PRAVDA UKRAINY in Russian 4 Sep 82 p 2] 11004

HEAT FROM BY-PRODUCT METHANE--Vorkuta--Use of boilers run by methane contained in mines has helped to increase the amount of coal delivered to the country's center by Arctic miners. This gas, which had been discarded in former times, now heats the drying units of the concentration factory belonging to the "Severnaya" mine. This will permit the enterprise to save 15,000 tons of coking coal annually. The "Vorkutaugol'" Association has created a special subdivision to rebuild the boiler and dryer units. The local "PechorNIIproyekt" institute is doing the planning, and all other work is being done on a self-help basis. Use of mine methane in boiler burners has not only produced an annual savings of hundreds of thousands of rubles but also raised production quality, lengthened the life of the equipment and precluded environmental polution. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 7 Sep 82 p 2] 11004

MINING QUOTA SURPASSED--Krasnoyarsk Kray--More than a quarter million tons of valuable fuel were mined in excess of the plan by miners of the "Borodinskiy" open-pit mine, which is operating as part of the future KATEK [not further identified]. The rotary excavator crew headed by senior machine operator V. Avtushko achieved the greatest successes in the competition in honor of the 60th anniversary of the USSR's formation. It promised to complete its annual quota by the Great October holiday. The coal mining masters are already credited with 3 million tons of fuel extracted since the beginning of the year. [Text] [Moscow IZVESTIYA in Russian 30 Sep 82 p 1] 11004

TWO-YEAR MINING QUOTA--Pavlograd--Miners of the Mine imeni XXVI S"yezd KPSS of the "Pavlogradugol'" Association reported fulfillment of the plan for 2 years, having delivered 200,000 tons of coal in excess of the plan since the beginning of the year. Working in complex mining and geological conditions, the miners reached the 1,000-ton mark in their daily production rate at their stope during the socialist competition in honor of the 60th anniversary of the USSR's formation. [by L. Teushchakov] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 26 Sep 82 p 1] 11004

COAL TRAINS--Amur Oblast--Each day diesel locomotive crews from the Tyndinskiy Locomotive Depot carry Yakut coal from the Neryungri open-pit mine on the lesser Baykal-Amur Rail Trunkline. In one of the last days of August they carried their five-millionth ton of fuel since industrial extraction began. The rate of coal shipment continues to grow with every month. The target for the last year of the current five-year plan is to mine and deliver 13 million tons of the "black gold" to consumers. [by M. Timchenko] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 3 Sep 82 p 1] 11004

HALF-MILLION TONS OF COAL--Vorkuta--A brigade led by Hero of Socialist Labor Yu. Bronnikov has now brought up half a million tons of fuel since the beginning of the year at the "Vorkutaugol'" Association's "Severnaya" mine. It has become the sixth collective in the association that has surpassed this high coal mining mark. In all, more than 10 mining brigades have promised to extract 500,000 tons or more fuel by the 60th anniversary of the USSR's formation. [by V. Krukovskiy] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 18 Sep 82 p 1] 11004

"YUBILEYNAYA" MINE RECORD--Nobokuznetsk--Miners of Yu. Ignatov's brigade of the "Gidrougol'" Production Association's "Yubeleynaya" mine has brought up its half-millionth ton of coal since the beginning of the year. This is exactly how much coal this leading brigade of hydraulic miners planned to extract by the 60th anniversary of the USSR's formation. It fulfilled its pledges almost 4 months ahead of schedule. It was successful owing to an increase in labor productivity. Every day Ignatov's brigade produces almost 300 tons of coal in excess of the daily quota. This is a mining record among miners of fully mechanized brigades in Novokuznetsk. [by A. Tenditnyy] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 12 Sep 82 p 1] 11004

MINE CABLE CARS--Cableways designed by specialists of the "Uglemekhanizatsiya" Scientific-Production Association can deliver cargo to drifts inaccessible to conventional mine electric locomotives. The association's experimental plant in Voroshilovgrad has begun manufacturing them. Such a transporter is capable of handling steep ascents and descents. Carts carrying materials and equipment are delivered right to the drifts by means of a special winch. Such a cableway operates dependably, it is practically noiseless, and most importantly it frees the miners of heavy manual labor. [Text] [Moscow PRAVDA in Russian 24 Sep 82 p 2] 11004

11004
CSO: 1822/28

CONSTRUCTION DEPUTY MINISTER INTERVIEWED ON GAS PIPELINE PROGRESS

Moscow SOVETSKAYA ROSSIYA in Russian 5 Oct 82 p 1

[Interview with USSR Deputy Minister of Construction of Petroleum and Gas Industry Enterprises A. Vesel'yev; date and place of interview not given: "On With the Pipeline!"]

> [Text] The first 1,000 kilometers of piping have now been welded into a single thread at the construction site of the new Urengoy-Pomary-Uzhgorod Gas Transport System. Having determined the planning deadlines, builders and installers of subdivisions of the USSR Ministry of Construction of Petroleum and Gas Industry Enterprises completed a fourth of the welding jobs on this unique gas pipeline. How was this labor victory achieved? The editorial board asked Deputy Minister A. Vesel'yev to answer this question.

A break with the traditional forms of management, the imperfections of which were revealed as the technical output capacity of our subdivisions increased, was the foundation of success. It would be sufficient to point out that just in the last 2 years the power available per worker increased by a factor of two in the work areas. It became difficult to manage the complex operation, in which many sectors were represented. Moreover each collective was responsible only for its immediate task, and was essentially indifferent to what its neighbor was doing. It was this isolation that we tried to surmount by creating the new administrative structure. Now the welding, preparatory, insulating and many other jobs have been brought together into a single production flow. Everyone is now concerned for just a single result, the final one--completion of the pipeline. And as a consequence labor productivity increased dramatically. While in former times laying 15 kilometers of piping in a month was thought to be an accomplishment, today we have become accustomed to much greater results. For example in September the "Novosibirsktruboprovodstroy" Trust reported completion of 25 kilometers by its production units. But even this, we found out, was not the limit: The production units of the "Mosgazprovodstroy" Trust laid 32 kilometers in that same month.

It stands to reason that the new administrative system would not have produced the desired result, had the organizational changes not been accompanied by an energetic search for new forms of socialist competition. As an example we have developed the following order: Every Monday the results of work on pledges and the weekly and daily assignments are summarized simultaneously along the entire route. This efficient method not only helps us to reveal the winners and the laggards and not only to immediately encourage them morally and materially, but also to reveal--this is especially important--the "bottlenecks," to take immediate steps to eliminate them. Here is a fresh example. On one of the last Monday meetings V. Belyayeva, chief of a production unit of a welding and installation trust, reported with alarm that failure of the socialist pledges was threatened by a shortage of pipe. It found out that the work pace in her area was so great that the planned quantity of piping was simply not enough. We got together with the railroaders to aid the collective, and literally in just 3 days we brought in the additional quantity of pipe.

The brigade contract, which is related to the Shchekino method, is the basis for organizing labor in our work areas. For example not that long ago the production units of the "Kuybyshevtruboprovodstroy" Trust employed more than 400 persons. Now there are 260. This is even though the work has not decreased at all--it has even increased. Everyone has started to work more effectively. Besides everything else, the stimuli are helping this along: To raise the interest of the workers in the end result, we introduced wages based on a common contract into the integrated production units.

Now a few words about the future. As the readers are already aware, the main construction and installation operations are now going on in the section from the Ural to the western border. The Siberian trusts will also begin their operations of laying the gas pipeline when winter begins. Their area extends from Urengoy to the Ural. They are to lay more than 1,000 kilometers of piping there in a short period of time. I would like to stress that completion of this task will depend not only on them but also on the haulers. Railroaders, seamen and rivermen must deliver the planned quantity of piping, production equipment, fuel and structures to that area. We are counting very much on their help.

The sector's labor collectives are confident that the socialist pledges adopted in honor of the USSR's 60th anniversary will be satisfied. The builders are fully resolved to lay not less than 2,000 kilometers of piping this year.

11004
CSO: 1822/24

PIPELINE CONSTRUCTION

ECONOMICS INSTITUTE DETERMINES PIPELINE ROUTING

Tallinn SOVETSKAYA ESTONIYA in Russian 10 Sep 82 p 2

[Article by A. Favorskaya: "Where Should The Gas Pipeline Go?"]

[Text] Only the specialists know the entire complexity of the answer to the question. Should the route be laid through centers containing the largest number of potential users of the gas? Or where construction of branch lines would be cheaper and labor outlays would be lower? Moreover other forms of fuel--coal and fuel oil--are also usually employed in the region of the planned gas pipeline system. Consequently the proportion of these fuels in the overall picture must be considered as well. But in this region, new enterprises may appear in the future and more gas would be required: Consequently we would need to foresee this also, given the preset gas availability. And the rate of development of deposits must be accounted for, and even the pipe diameter and gas pressure, so that the gas would be able to reach the required point.

"Add to this that we must also necessarily account for the interests of nature conservation. In other words the solution to the problem must simultaneously satisfy many needs, and as you can see, they can be contradictory: The cheapest variant of the gas pipeline, for example, is not necessarily the thriftiest in relation to nature," Mikhail Korchemkin (a senior scientific associate and a candidate of economic sciences) explained to me what is referred to in the language of science as a multiple-criterion approach to solving a complex dynamic problem.

We, dear reader, are now in the sector for mathematical economics of the Economics Institute, Estonian SSR Academy of Sciences. And although natural gas is extracted thousands of kilometers from Tallinn, the fate of the gas pipelines through which it passes to the consumer is decided to a great extent here as well. The fact is that the problem of such great complexity described above--optimizing gas supply in a given region--cannot be solved without mathematical economic calculations with a computer. This requires special mathematical machinery--mathematical models and a package of programs which have to be constantly updated as the client imposes new requirements. All of this has been worked out by colleagues of the sector under the guidance of its founder and its director since its founding, Il'ya Zalmanovich Kaganovich. The novelity of this work lies precisely in the multiple-criterion approach it uses, which permits simultaneous consideration of all required factors. How much would a cubic meter of gas cost in a given locale? Would the advantage of using gas in this place make laying a branch to it worthwhile? The sector's specialists have now been systematically answering such questions associated with concrete calculations for 15 years, and even more.

"How much territory have we dealt with in this time?" Paavo Rooba, a group leader in the sector pondered for a moment and then began: "All of the Baltic republics.... Belorussia.... And the Northwestern regions--the Karelian ASSR, Leningrad and Vologda oblasts...."

The sector works out contract details with the "Giprospetsgaz"--the State Institute for the Planning of Main Pipelines. "Giprospetsgaz" prefers a different name for their cooperation--creative contacts. Recently it sent a letter to the sector recalling the large number of studies to determine technical-economic, technical plans and gas supply diagrams they had worked out jointly for different regions of the USSR. The letter expressed thanks for the fact that these contacts were making the calculations more easy to explain, and that in the final analysis they were reducing the cost of gas pipeline construction. But of course the letter was sent for more than just praise. It also contains lines of greater importance, discussing the fact that "Giprospetsgaz" was interested in further creative cooperation and was asking to take part in a project titled "Determination of the Suitability of Planning and Erecting Main and Branch Gas Pipelines to Transport Gas From the Yamal Peninsula to Northwestern and Central Regions of the USSR in the Period to the Year 2000."

Jointly with sector institutes, in the last five-year plan the sector drew up instructions on performing mathematical economic calculations with a computer during the planning of regional gas supply systems, and submitted it as a proposal to the Ministry of Gas Industry. After this proposal was introduced, the real annual impact was a little less than a million rubles.

"In general, it is a very difficult thing to develop a mathematical model that would correspond to the given optimization problem," said M. Korchemkin. "The uncertainty of the raw data is very great, since there are no accurate data on gas production and consumption and the figures are given as ranges of values. Candidate of Sciences A. Laur has joined this effort."

We could perhaps learn even more interesting things about the daily work being done in the sector by one doctor, six candidates of sciences and another three colleagues. But this would all be of more interest to specialists. I will simply note here just one more new direction that has been assumed by Sergey Magylin, a junior scientific associate: He is drawing up forecasts for citywide gas requirements as correlated with weather forecasts. This is very important to know for efficient gas consumption.

11004
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PREPARATION TO LAY PIPELINE ACROSS VOLGA UNDERWAY

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 19 Sep 82 p 1

[Article by Correspondent R. Valeyev, Kazan-Zvenigovo: "Let the Volga Waters Part"]

[Text] We are traveling on the Volga aboard the metrological vessel "Oskol." There is a little bit more than 7 feet beneath the keel.

"This is where the pipe will cross the Volga," Vladimir Vanzhula, foreman of the underwater technical operations section pointed at the gray waves. That's an easy thing to say: to cross. The 2 kilometers of pipe will weigh 400 tons, and to make matters worse it will have to be laid in the water.

Drawings of the underwater gas main were spread out on the captain's bridge. The steel pipe wound its way over the bottom of the river like a rubber hose, hugging the underwater cliffs and diving into bottomless canyons. Soon these drawings will transform into a steel main. There seems to be nothing but obstacles on the route of the Urengoy-Uzhgorod gas pipeline! And here, beside the city of Zvenigovo, the pipeline has met the Volga.

Construction of the crossing is now in full swing. It is being directed by specialists of the Kazan Specialized Administration for Underwater Technical Operations. To the layman's eye everything seems to be as it usually is: "Meteors" slide over the watery flats, steamships float grandly by, and fishing boats sit motionless in the water. And right next door three dredgers are cleaning the bottom with powerful scoops and pumps.

The "Oskol" moored to the side of one of them. Artur Vagapov barked an order from the captain's bridge: "Raise the boom! Check the engine!" And he himself descended to the base of the crane arm. On deck there was an entire mountain of blackened branches of the most monstrous shapes. The boom snagged another submerged log. It was responsible for keeping the dirt out of the pump, such that the dredger could do nothing more than put out an "artesian fountain": A white column of clean water was shooting out of the pipe. But this time they were in luck: They did not need the divers.

Motor mechanic Aleksandr Kartuzov took a second to check the depth. The 7-meter trench dug in the river bottom had to be oriented strictly according to the drawings. The parameters of the trench were checked with a multiple-beam echo sounder installed aboard the "Oskol."

Soon it is time for the divers to go to work. Giving the signal from a portable radio, Nikolay Gavrilov and the foreman of the diver group, Fargat Shaydullin, help Nikolay Konokorov into his diving suit. He descends in his 80-kilogram pressure suit to check the trench that had been dug the day before. Forty minutes later his copper diving helmet appeared on the surface: Everything's in order!

V. I. Semenov, the commander of the dredger, counts on his fingers: "Sylva, Sura, Iren', Vyatka, Ilet'.... And now the Volga...." He was listing the rivers that had been crossed by the gas pipeline. One could not say of any of these rivers, both large and small, that they were easy. But the Volga is a completely different situation. Its depth, the sunken logs, the underwater islands and the busy vessel traffic have to be reckoned with. Each day each dredger moves forward 10-15 meters, and three times a day the "Oskol" quickly moves the anchors of the dredgers. Forward, only forward! The motor mechanics, divers and geodesists are all working here with the same goal--completing the trench on schedule and begin laying the strands of the gas pipeline across the Volga bottom by the start of October.

Preparations are being made for this day on the left bank. A cozy town of prefabricated houses was laid out here. Here at the starting point, pipes prepared for lowering stretch out like giant snakes. These 200-meter lengths were delivered from Kazan. Several years ago no one would have believed that pipes could be assembled far away from the welding site and delivered by water. In former times pipes were shipped in from afar in 10-meter pieces, after which it took a long time to assemble and test them. Now the lengths are assembled and tested at a central base in Kazan, after which the ends are plugged, and tractors drop the pipes into the water. Each of them weighs 90 tons. Powerful tugs drag this unusual raft of steel "timbers" almost a meter and a half in diameter to this place, Zvenigovo. It takes them less than a day to travel 70 kilometers.

One more thing I would like to mention. "TG-501" pipelayers manufactured by the Cheboksary Industrial Tractor Plant are now beginning to arrive in Zvenigovo. Two years ago the American authorities halted deliveries of tools to make this powerful tractor. The workers of Cheboksary then decided to support production of the machines through their own efforts. And now we have our own pipelayers! Now these mechanisms are coming to the aid of the gas pipeline's builders. In October they will surmount the Volga with one swift leap.

11004
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EX-SERVICEMEN HELP BUILD GAS PIPELINE

Moscow KRASNAYA ZVEZDA in Russian 18 Sep 82 p 2

[Article by KRASNAYA ZVEZDA Correspondent Ye. Sorokin: "Between the Volga and the Sura"]

[Text] The standard time limit for remaining under water had lapsed. Nikolay Gavrilov could tell this without looking at his watch. He could feel a cold sweat beginning to cover his forehead, his breathing was faster, and it was becoming harder to move.

"Time to go up," Gavrilov heard the hollow voice of Fargat Shaydulin, the chief of the diving station, through his earphones.

"O. K., hold your horses," Gavrilov tried to speak calmly, though an anxious thought was boring into his head: He had lost his bearings. He raised his hand to right his hose, and he shuddered: There was something hard over his head. Was he really beneath the bottom of the dredger?

Yes, so it was. Gavrilov reported to the surface:

"The dredger is above me."

These words, amplified by a loudspeaker, resounded on the launch like thunder out of a clear blue sky. For the first time in 8 years of work, Shaydulin was unnerved. A decision had to be made without delay--there was little time left.

"Don't worry," Fargat ordered, banking on intuition: "Move backward, carefully!"

The confident tone of the order raised Gavrilov's courage.

"Yes, Comrade Sergeant!"

Shaydulin compelled him to report literally on his every step. So it was that Fargat guided the actions of his comrade from the launch, until the latter made it out from beneath the dredger. Having decided that the danger was passed, Gavrilov would have rushed straight up, but Shaydulin checked him abruptly:

"Where are you going? Stop at 15 meters!"

It was not until he had rested in the pressure chamber that Gavrilov came to the realization of what Shaydulin had done for him. And he silently, gratefully smiled at his comrade.

It was a long time since Gavrilov had referred to Shaydulin as the sergeant. He had obviously recalled that difficult moment when, on arriving in the frogman subunit commanded by Major Yu. Rogozhkin, Voropayev and he--two novices--began their training with Sergeant Shaydulin. And how he harassed them! At least that was the way it seemed at the time. But after they learned the ropes, they came to realize that there was good reason behind the sergeant's nagging. Many times subsequently they recalled the harsh school of army seasoning with kind words. And often at times they thought: Where is he now, that Sergeant Shaydulin?

He was right next door, as it turned out. Fargat Shaydulin arrived with his section on the bank of the Volga to prepare for the laying of an inverted syphon. He was warned: It was not going to be an easy job, and therefore he was going to get the most dependable helpers. They arrived, and to his surprise they were Gavrilov and Voropayev.

A diver is a special person in the construction of the gas pipeline. He is the eyes and ears of all underwater technical operations. Here in the channel of the Volga, divers work at a depth of up to 30 meters. They are allowed to remain beneath the water for only 2 hours a day. During this time they have much to do. They must determine the depth of the trench dug by the dredger and the composition of the ground. The divers are aware of the value of their time. Especially since any waste in their work could lead to uncorrectable consequences.

Discussing their work on the gas pipeline route, many compare the working conditions with those they had endured in the army. Here also one needs the same ability to make a home in places where man has never set foot, and to establish normal living conditions in a harsh land. Here also is the same strict discipline, and complete devotion to the work.

I met an amazing person here--Lieutenant Colonel (Reserve) Filipp Filippovich Somenko. One looks at this strong, elderly person, with whom one can barely keep up with a fast clip, and thinks in disbelief: Is he really pushing eighty?

"Yes, I'm seventy-two," Filipp Filippovich confirmed. "But what's so surprising about that? I'm a soldier, after all. And I'm proud of the young lads who join us after the army. It is because of their army background that they are referred to as the construction project Guards."

In just 2 months they had in fact built up a town with a water supply, dining hall and store. The whole effort is managed by Somenko. What kind of people does it take to do this? Military people, first of all. It is no wonder that the pipeline layers often say: "Let's do it in the military way." That means quickly, intelligently, conscientiously.

Nikolay Vasil'yevich Polikarpov still remembers the following incident well, even though it happened 20 years ago. It was when he was in the army. Gathering them--the sergeants--together for a lesson, the company commander explained the situation and said:

"You have 5 minutes to think the problem out."

Sergeant Polikarpov joked:

"But can we have six?"

The company commander turned his eyes on him with a silent, attentive gaze. And then he told the following story.

"I was at the front. I was 'green' at the time--it was my first day of fighting. They gave the signal: 'Attack!' I lay on the bottom of my foxhole and thought: 'Let me have at least another minute, half a minute.... Just a few seconds more.' For some reason I felt that if I stood up, I would be killed.

"And so, sergeant, while I was counting those seconds, an entire half hour went by. And so I never rose up to the attack. My friends and the enlisted men knew what I was going through, and they forgave me. But I could never forgive myself for those extra minutes of deliberation."

And so it was, from that time on, that Polikarpov has been intolerent of cowardice.

Polikarpov had his own word for the giant pipeline--the "tube." But the brigade leader has every right to such a flippant attitude. Bukhara-Ural, Nadym-Punga-Nizhnyaya Tura, Perm-Kazan-Gorkiy, Surgut-Polotsk: This is far from a complete list of the pipelines which Nikolay Vasil'yevich helped build.

His experience tells him that wherever equipment is powerless, a workman's boldness comes to the rescue. Once the brigade found itself short of the required number of pipelayers. Were they to wait for several days until the equipment would arrive? He gathered the brigade members together to discuss the problem. All of them--F. Gil'manov, V. Paramonov, V. Mel'nikov, A. Burgart, S. Bochkanov and I. Sokolov--came to unanimous agreement: A bulldozer could be used in place of one of the pipelayers to help support the pipe.

Laying a pipe into a trench is a complex operation. It is only outwardly that the pipe looks so clumsy. It can also be nimble and spry. Polikarpov says "roguish." And he knows what he is talking about.

With great caution they began their work, having foreseen every detail. And the pipe was obedient to the experience of the masters this time as well.

That is what is meant by 5 minutes to think, and no more.

"In our section the pipeline grows a kilometer in a day," said Vladimir Il'ich Gabuyev, chief of "Kuybyshevtruboprovodstroy" Trust's Garage No 1. "There was a time when we could not even have dreamed of such a pace."

Gabuyev is one of those who represents a new special breed of indefatigable people considered strange by the standards of our mundane life--the pipeline layers.

What does his work involve today? There are the "Sever-1" complexes for contact arc welding of pipes, rotary excavators with a productivity of 1,200 cubic meters per hour, pipelayers with a lifting capacity of 50 tons and dredgers with a productivity of 300 cubic meters per hour. The diameter of the pipe that must be laid in the trenches is close to the average height of a man--1,420 millimeters. An unrestrainable rush of gas equivalent to 40 million tons of comparison fuel will be pushed through it by a pressure of 75 atmospheres.

I cannot keep from citing a few more figures which astound even those of us who have become indifferent to the fantastic. Every 1,000 kilometers of the route are equivalent to a million tons of metal. The amount of power required to pump gas in such a section of pipeline is not less than that produced by the modern Dneprogas--800 megawatts. Fifty million cubic meters of dirt must be dug out of the foundation pits and trenches, and then put back.

These are the millions which today's Soviet pipeline layer deals with today. But in the course of several decades something else was accumulated as well--a sense of professional pride, mutual assistance and high responsibility for the country's "arteries of life."

It was spring 1946. Vladimir Gabuyev took charge of a garage belonging to the "Vostoknefteprovodstroy" Trust, which had just been formed. Low-power ZIS trucks wound their way along the road into Tambov Oblast. They were building a petroleum pipeline which was thought to be long in those days--180 kilometers. There were neither excavators nor bulldozers. It could be said that they were building it by hand.

They dug the trench from early morning to late at night. Working together, they were able to move the improbably heavy pipes. They sprayed hot bitumen over them, and they wiped them down with towels. When vehicles got stuck in the mud, they were pulled out with cables with steel-wrenching effort. But the people stubbornly went forward. One kilometer after another.

Some of the veterans still work for the garage, though they are now pensioners--A. Kireyev, T. Lyapuntsov, P. Malyshenko and A. Mukhamedzyanov. Recalling those times, they say little about the difficulties. They remember more about what they had thought at that time. In the evenings, gathering together at the campfires, they dreamed about powerful equipment and about cozy settlements for gas pipeline layers. Settlements which would offer baths, a store, a dining hall, and perhaps even a swimming pool.

And now we have them, the pipeline towns. They have saunas, cozy warm houses and swimming pools.

In a little while, news comes from the route of the Urengoy-Uzhgorod gas pipeline in a form somewhat resembling battle summaries. Tests on the 166-kilometer section in Saratov Oblast have started. The Kama has been conquered. The Volga is next. The collective of this production unit decided to fulfill it annual pledges by the 60th anniversary of the USSR. This gas pipeline, which is being coaxed along by courageous, selfless people, will extend more than four and a half thousand kilometers. And every kilometer of the route is hard. It demands stubbornness, courage and proficiency. At every kilometer.

11004
CSO: 1822/26

PIPELINE CONSTRUCTION

TSIVILSK SECTION OF GAS PIPELINE IS ON SCHEDULE

Moscow KRASNAYA ZVEZDA in Russian 5 Sep 82 p 1

[Article by S. Yevgen'yev: "The Strides of the Steel Giant"]

[Excerpts] The little town of Tsivilsk, in the Chuvash ASSR, had never seen such commotion in all of its history. Powerful Soviet and foreign equipment and an endless flow of trucks and buses on "Ural" chassis invaded the town. And this represented only the equipment brought by workers of just one collective--Integrated Production Unit No 1 of "Kuybyshevtruboprovodstroy" Trust.

They selected the place for their camp on the outskirts of Tsivilsk. Dozens of large cylindrical rail cars could be seen well from the road. They are referred to here as "barrels." A store and a dining hall are under construction, pedestrian walkways are being paved, and work is going on full steam in the carpenter's shop. It is hard to believe that in just November of last year there was nothing here but an enormous field on which a single lone rail car stood.

"There were only five people in that rail car," recalls the unit chief, Lieutenant (Reserve) V. Mikhel'son, "excavator operators Aleksandr Vorovkin and Aleksandr Abayev, foreman Yuriy Semenyuk, driver Aleksandr Bychkov and I. So it was that we began here, in the same way that all gas and petroleum pipeline workers laying 'arteries of life' begin." And he added with feeling: "Only people who are really in love with their work can survive such conditions. And I don't think we have any other kind."

Love of work is something that is measured by its products. Evidence of it can be found primarily in the competition results of the brigades, which are posted on the rail car containing the construction headquarters. The brigade led by N. Zarubin welds up to 500 meters of pipeline per day. Nor is the work any slower in the collectives headed by A. Lebedev and V. Tonkikh. And as a whole, the production unit lays a kilometer of the route per day.

What does this mean? Lengths of pipes almost a meter and a half in diameter must be shipped in, welded and insulated, a trench almost 3 meters deep must be dug, the gas pipeline must be laid in it, the trench needs to be refilled, and the soil has to be revegetated. And we must constantly remember that even the slightest imperfection could cause the powerful rush of gas, which will speed through the pipeline at a pressure of 75 atmospheres, to create a disaster.

The collective of the production unit is responsible for "only" 127 kilometers. This means surmounting 60 canyons, 15 intersections with motor roads and railroad tracks, and crossing dozens of rivers and streams. Nonetheless, the collective continues to progress, a kilometer a day. In all circumstances, and in the worst weather.

The gas pipeline layers get their strength not only from modern equipment and not only from highly qualified personnel (nine out of every 10 workers are masters of the highest rank, the sixth). This year the unit collective was one of the first in the USSR Ministry of Constuction of Petroleum and Gas Industry Enterprises to work on the basis of a unified order. Figuratively speaking, all 186 persons are now working as a single brigade. Neither the welders not the insulators nor the mechanics divide the work into "ours" and "theirs" as they did before.

Nikolay Ivanovich Zarubin, the leader of a welders' brigade, was in a bad mood: It was pouring. This meant that before welding the seams they would have to set up burners at the pipe joints and dry the welding points with a powerful flame of burning propane. And this is what they did that day.

One looks about, and is amazed by the agility and expertise of the workers. They join the multiton pipes to each other as if it were child's play. Pipelayer operator Aleksandr Ivanovich Sharagin picks up the next length of pipe with his crane, and the latter grasps the pipe at its center with its gaping jaws in such a way that the distance between the pipes does not exceed a millimeter and a half. This is the way it is supposed to be. And the length (each meter weighs a ton!) sits totally still after being put down. This is what is known as a "jeweler's precision."

Just a few seconds later welders S. Buchin, V. Prokof'yev and Yu. Sergeyev finish welding the first seam joining the pipes. And there must be four or five of them. And all of this must be done within 20 minutes!

Yes, the gasmen do know the value of time. Once--this happened in the flood plain of the treacherous Bolshoy Tsivil River--a pipelayer driven by Yu. Yevstifeyev got stuck in the mud right up to the cab. Insulator brigade leader N. Polikarpov, bulldozer operators S. Kozlov and F. Kulakov and other members of the brigade stayed with the pipelayer two nights and a day, until they finally freed it from the quagmire.

The complexities of the route also dictate the tactics the people are to take. Sometimes two pipelayers have to grasp a single length together on steep canyon slopes. They have to "crawl" beneath high-voltage power lines without interrupting the supply of electric power. Sometimes they have to use bulldozers to assist pipelayers in laying the strand of pipe into the trench.

This section of the gas pipeline now extends from the Volga to the Sura. It is one of many sections of a gas main more than four and a half thousand kilometers long. The pipeline route of the century--Urengoy-Pomary-Uzhgorod--is confidently striding across the country, surmounting all obstacles.

11004
CSO: 1822/25

PIPELINE CONSTRUCTION

PIPELINE CONSTRUCTION BEGINS NEAR OKHOCHEVKA

Kishinev SOVETSKAYA MOLDAVIYA in Russian 19 Sep 82 p 1

[Article by TASS Correspondent A. Shchiglenko: "Difficult Kilometers"]

> [Text] The first kilometers of pipe have been laid in the trench in the Kursk section of the Urengoy-Pomary-Uzhgorod gas pipeline.

The day began sunny and clear, as if someone ordered it that way. Descending from a hill, a black trench line crossed the yellow mowed fields and headed for a small birch grove. Pipelayers and trucks were accumulated beside it. All surveyors free of duty convened together to lay the first kilometer of pipe.

A wave of a flag, and four pipelayers gently lowered the steel strand of pipe to the floor of the trench.

From ancient Yelets in Lipetsk Oblast to the Ukrainian border--this was the path that was to be traveled by the builders over Kursk soil. And although the terrain was inhabited here, there would be no less difficulties than in the taiga wilderness. They would have to force several rivers, cross busy highways and railroads and revegetate hundreds of hectares of land. Almost 35,000 joints will be welded, and gas pumping stations will be built. All jobs in this section of the pipeline are to be completed by the end of the next year.

"Integrated production units created for the route will help us complete our task," said V. Azanov, chief of Construction and Installation Administration No 4 of "Krasnodartruboprovodstroy" Trust. "What is a production unit? It is essentially a large integrated khozraschet collective. Before, for example, one brigade dug the trench, another welded the pipe, a third insulated it, and a fourth laid it and filled the trench. If anything happens to stop the work in one collective, all of the others must immediately stop as well. But in a production unit, stoppages occur much less frequently: Any problem can be corrected by everyone working together. The labor is evaluated on the basis of the end result. Now that the work is organized in this way, a high rate has become possible: one kilometer of the route every day.

Just a few months ago the first party of gas pipeline builders arrived at Okhochevka, and today an improved residential town sits beyond the outskirts of this village. It has a children's nursery, a medical station, a store, a barbershop, a repair shop and a laundry. Sidewalks have been laid, and flower garderns have been planted. It is with such thoroughness and swiftness that people having considerable experience in working in the field can settle themselves in.

11004
CSO: 1822/25

PIPELINE CONSTRUCTION

BRIEFS

EQUIPMENT AIDS PIPELINE PROGRESS--Erection of gas pipelines in our country is continuing successfully. This is owing to the great amount of equipment being provided to the construction sites. Many machines and mechanisms developed by specialists of the "Gazstroymashina" Special Design Office have earned excellent recommendations in the complex conditions of the North. The "Tyumen'" BT-361 marsh vehicle, which was designed on a rush basis, is operating well. Series production of the ETR-254 rotary excavator has been organized to replace the ETR-253 excavator. It will dig trenches for pipe 1,420 mm in diameter. This year 70 rotary excavators and other machines will be shipped to the country's gas pipeline construction sites. [Text] [Moscow IZVESTIYA in Russian 29 Sep 82 p 3] 11004

PIPE HAULERS SHIPPED--Moscow--The collective of the "Gazstroymash" Plant shipped a consignment of pipe haulers to the Tyumen North ahead of schedule yesterday. These trucks are intended to carry large-diameter pipes to the route of the Urengoy-Pomary-Uzhgorod gas pipeline. Built on the chassis of the "Ural-375" truck, they are distinguished by good cross-country capability and dependable operation. [Text] [Moscow GUDOK in Russian 1 Oct 82 p 1] 11004

PIPELINE PLANT UNDER CONSTRUCTION--Kharp (Tyumen Oblast)--A plant under construction in the Arctic town of Kharp will produce structures to be used in erection of compressor gas pumping stations. Six main gas pipelines leading out of the Tyumen North will be built together in the current five-year plan. The new plant will help complete the immense program of outfitting them. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 23 Sep 82 p 1] 11004

MORE PIPE LAID--Ufa--Subdivisions of the Glavvostoktruboprovodstroy laid pipe in their section of the Urengoy-Novopskov gas pipeline ahead of schedule. Having completed the laying operation, they have surrendered a section more than 1,100 kilometers long for testing and final adjustments. After the tests are finished, the builders will be able to significantly increase their pace in erecting the second gas main, Urengoy-Pomary-Uzhgorod, concentrating all of their efforts on the new route. Here, enterprises of Glavvostoktruboprovodstroy have the job of laying a 1,400 kilometer section. The pledges adopted by the collective foresee completion of this section ahead of schedule as well--in the third quarter of 1983. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 12 Sep 82 p 1] 11004

GAS CLEANING PUMPS SHIPPED--Riga--The collective of the "Rigakhimmash" Plant completed an order from builders of the Urengoy-Pomary-Uzhgorod gas pipeline ahead of schedule. A consignment of pumps to be used to remove impurities from gas has been shipped to the route. Production went ahead of schedule owing to introduction of a large number of innovative proposals. [Text] [Kishinev SOVETSKAYA MOLDAVIYA in Russian 2 Oct 82 p 1] 11004

SUPPORT TO GAS PIPELINES--The Lvov "L'vovpribor" Plant has started preparations for series production of centralized monitoring and control apparatus for compressor stations to be located on the Urengoy-Uzhgorod gas pipeline. Having signed a contract of creative cooperation with their associates, the instrument makers have pledged to begin production of the new products in the fourth quarter, rather than at the beginning of the next year, as had been planned. Workers of the Riga Diesel Building Plant have already manufactured a large consignment of engines and many extra spare parts for gas pumping units, all within the third quarter. Several marine transporters loaded with large-diameter pipes arrived at the wharves of the port of Novyy, located in the Bay of Ob', from the Federal Republic of Germany. Taking up the space of several railroad cars, a high-power gas pumping unit has been shipped from the sidings of the Khabarovsk "Energomash" Plant to the construction site of the Urengoy-Pomary-Uzhgorod gas pipeline. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 30, Jul 82 p 3] 11004

MORE PIPE LAID--The thousandth kilometer of pipe has been welded into a single strand along the route of the Urengoy-Pomary-Uzhgorod export gas pipeline. Work on the 4,460 kilometer route has entered its decisive phase. Production collectives of the Soyuzgazspetsstroy Trust headed by I. Rozanov and S. Muzhiv have completed their socialist pledges in honor of the 60th anniversary of the USSR ahead of schedule. They are completing installation of the gas main within their 240 kilometer section from Algasov to Yelets. The collective of the production unit of the Soyuzintergazstroy Association's Transcaucasian Pipeline Construction Administration No 1, which is laying a gas main through the Carpathians, has proposed a new patriotic initiative. It has decided to lay a 60 kilometer section of the Urengoy-Pomary-Uzhgorod gas main by the 60th anniversary of the USSR's formation and, connecting it to the "Bogorodchany" compressor station of the "Soyuz" gas pipeline, to begin running the blue fuel through the Dolina-Uzhgorod gas pipeline. [Text] [Moscow STROITEL'NAYA GAZETA in Russian 1 Oct 82 p 1] 11004

EQUIPMENT FROM ARMENIA--The Kirovakan "Avtogenmash" Plant in Armenia is among the enterprises providing equipment support to construction of the Urengoy-Pomary-Uzhgorod export gas pipeline. It produces gas welding and cutting units. [Text] [Moscow PRAVDA in Russian 3 Oct 82 p 1] 11004

GAS PUMPS FOR PIPELINE--The collective of the Sumi Machine Building Association imeni M. V. Frunze has begun production of gas pumping units for the Urengoy-Pomary-Uzhgorod gas main. The first unit was shipped today to the pipeline route. By the end of the year the plant collective intends to manufacture another five such machines. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 26 Sep 82 p 1] 11004

PUMP CONSIGNMENT FOR PIPELINE--Orel--The products of the "Livgidromash" Association enjoy a high demand not only in the national economy of our country but also far beyond its borders. Assuming a shock watch in honor of the 60th anniversary of the USSR's formation, the collective of shop No 12 of this enterprise manufactured another consignment of pumps for builders of the Urengoy-Uzhgorod gas pipeline. Other shops of the association are also producing hydraulic machines for this construction product, the most important in the country. The association's workers and specialists have guaranteed that the entire quantity of pumping products they have planned to produce will be of high quality and will be delivered ahead of schedule. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 27 Sep 82 p 1] 11004

IVATSEVICHI-DOLINA PIPELINE OPERATIONAL--Lvov, 2 October (RATAU correspondent)--The last 22-kilometer section of the Ivatsevichi-Dolina gas pipeline is now operational. Yesterday's tests proved the quality of the entire complex of pipe welding, insulating and laying operations to be high. The honorable right to report completion of the construction of the straight section of the gas main fell upon ambassadors of the Russian Federation from the "Shchekingazstroy" Trust, who labored side by side with workers from Leningrad and with representatives from the Ukraine, Belorussia and the Central Asian republics. From this moment on, there will be three strands operating along the more than 500 kilometer stretch of the gas pipeline. Having extended the route from Ukhta through Torzhok and Minsk to Ivatsevichi, it has made it possible to significantly improve the supply of northern blue fuel to the western oblasts of the Ukraine and to increase its export into countries of the socialist fraternity. Completion of the last section coincided with acceptance of the "Kovel'" compressor station by the state commission. The new output capacities make it possible to significantly increase the system's throughput. The Ivatsevichi-Dolina pipeline is one of the largest laid over the republic's territory. Pipes of large diameter were used on an extensive scale here. Experience acquired during the laying of this gas main will be utilized during erection of the Urengoy-Uzhgorod gas pipeline. A significant proportion of the construction subdivisions and powerful equipment have already been redeployed at the new route, where the work pace is increasing with every day. [Text] [Kiev PRAVDA UKRAINY in Russian 3 Oct 82 p 1] 11004

PIPE WELDING BASE COMPLETED--Mari ASSR--Erection of a pipe welding base has been completed at the Pomary Railroad Station. Another section of the Urengoy-Pomary-Uzhgorod export gas pipeline will take its start from this base. Equipment from Kiev, Chelyabinsk and Ufa has been put together and installed. It is now undergoing adjustment. [Text] [Ashkhabad TURKMENSKAYA ISKRA in Russian 19 Sep 82 p 3] 11004

GAS PIPELINES CROSS--Tyumen--Dozens of water and other obstacles have been surmounted by the Urengoy-Pomary-Uzhgorod gas pipeline, presently under construction, just in the Tyumen section alone. Here, not far from Nadym, it was planned to cross another channel--an unusual one at that. Consisting of six pressurized arteries, it is now carrying Siberian blue fuel to the country's western regions. The important task of crossing this pipeline was given to pipeline layers of the "Severtruboprovodstroy" Trust's Construction and

Installation Administration No 5. In a short time a tunnel was dug beneath the operating pipelines. Welders prepared 100-meter lengths of the pipe, which were then dragged along the floor of the trench to span the entire working corridor. This task was successfully completed this last week. A high class of proficiency was displayed in this work by excavator operator B. Salakhov, pipelayer operators V. Burlak and V. Nardyuzhev, four arc welders headed by brigade leader V. Igoshev and others. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 6 Oct 82 p 1] 11004

PUMPING STATION FINISHED EARLY--Ufa--The standard time for erecting a high capacity pumping station was beat by 5 months on the Surgut-Polotsk petroleum pipeline, presently under construction. The new station, which was named "Mostovaya," has been placed into operation. It is now the third on the route extending from West Siberia to the country's center. The first two were also placed into operation ahead of schedule by the collective of the general contracting organization, the "Bashneftepromstroy" Trust's Construction and Installation Administration No 6 and its subcontracting organizations. In the competition for early completion of new pumping capacities on main pipelines, V. Kalashnikov's installer brigade, Yu. Shumatova's concrete layer brigade and M. Gil'met'yanov's carpenter brigade attained high work indicators. [By I. Payvin] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 3 Sep 82 p 1] 11004

AIR COOLER MOTORS--Moscow--Motors for air coolers to be delivered to the Urengoy-Pomary-Uzhgorog gas pipeline have been manufactured in a northern modification. The first consignment of such motors was shipped today to the clients by the collective of the Electromechanical Plant imeni Vladimir Il'ich. This is not the first year the enterprise has been manufacturing such products. However, this was the first time it assimilated production of explosion-proof equipment intended for operation in the North. Following a tight schedule, the enterprise's specialists made changes in the production procedures and selected insulating materials and linings having properties that would remain constant at low temperatures. Before the end of the year the collective of the enterprise intends to produce 40 such machines. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 20 Oct 82 p 1] 11004

PIPELINE OPERATOR TRAINING--Tyumen--The Urengoy-Pomary-Uzhgorod gas main will be serviced by truly proficient specialists. The responsibility of training specialists for the route was accepted by the institutes, tekhnikums and training-production combines of West Siberia. Thus gas industry's tekhnikum, which was opened recently in Novyy Urengoy--right at the start of the gas main--will begin to train about 400 highly skilled specialists each year. "We believe training the operators to be the key to successful operation of the gas pipeline," said G. Krylov, deputy chief of the All-Union "Tyumen'gazprom" Industrial Association. "The steel main is a most sophisticated enterprise equipped in accordance with the latest achievements of science and technology. Whatever the quality of the knowledge possessed by the people assuming control at the consoles, so will be the payoff from the equipment. All of this has been accounted for in the personnel training program." In addition to middle-level specialists, the schools are also training engineers to serve as shift and section leaders. Training in needed specialities such as gas pipeline planning and operation and gas deposit development and exploitation has been organized for the first time at the Tyumen Industrial Institute. The practical phase of training will begin concurrently with installation of gas pumping units. The operators have decided to arrive at the station simultaneously with the builders and adjusters. This will make it possible for them to learn the equipment down to the last bolt. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 2 Oct 82 p 1] 11004

PIPELINE CROSSING VOLGA--Zvenigovo, Mari ASSR--Builders have completed preparation of a siphon crossing the Volga, part of the 2,242 kilometer route of the Urengoy-Ponary-Uzhgorod gas pipeline. And although they are well aware of the river's character--this is the 40th time it is being crossed--the Volga once again offered many surprises. "The portion of the channel in the vicinity of Zvenigovo, where the siphon will be laid," said V. Pelipenko, chief of the Administration for Underwater Technical Operations No 4, "is abundant with sunken logs, and the river is perpetually filling the pipe trench with mud. We have also encountered hard ground that does not yield to ordinary equipment." The "Podvodnik-1," a dredger adapted for work in such conditions, came to the rescue. The crew of the vessel supported the initiative of the builders, pledging to finish the Volga crossing ahead of schedule. Having ferried the vessel from the Kama in just 5 days, the crew of the "Podvodnik-1" prepared it for operation in just half of the usual time. Now more than 50 meters of the underwater bed for the gas pipeline are being dug each day. Work is also going on around the clock on land. On the left bank of the Volga, which is more than 2 kilometers wide at this point, 12 200-meter lengths of the siphon have been prepared. It was assembled at a special testing ground in Kazan. The pipes were welded together into lengths on a mechanized rack, then they were tested with a pressure of up to 100 atmospheres, and the quality of the welded seams was checked with X-rays. The final operations are coming to an end. The people and the equipment are ready to cross the largest of 30 rivers along the route. The builders have promised to complete this complex section more than half a year ahead of schedule in honor of the 60th anniversary of the USSR's formation. [By N. Sorokin and A. Sul'din] [Text] [Moscow SOTIALISTICHESKAYA INDUSTRIYA in Russian 9 Oct 82 p 1) 11004

CSO: 1822/26

SVERDLOVSK MANUFACTURES PARTS FOR PIPELINE

Moscow STROITEL'NAYA GAZETA in Russian 26 Sep 82 p 1

[Article by Correspondent N. Pozhidayeva, USSR Ministry of Installation and Special Construction Work Press Center]

[Text] Seven gas compressor stations will rise up in Ivdel along the routes of main and branch gas pipelines. The "Uralmetallurgkonstruktsiya" Production Association has begun production of enlarged pipeline units in Sverdlovsk for gas compressor stations on the Urengoy-Center and Urengoy-Uzhgorod routes. Of the 900 tons of required units for the new Ivdel station on the Urengoy-Novopskov route, which is being installed by the Uralmetallurgmontazh Trust, 320 were shipped by as early mid-September.

The meeting was a lively one. Electric welder N. Kamayev, V. Khrushchev, the foreman of the section in which the enlarged pipeline units are being installed, and all engineers and workers speaking at the meeting were unanimous in their resolve: The shop collective pledged to complete the orders for the gas compressor stations ahead of schedule and with excellent quality.

Construction of gas compressors is a new thing to subdivisions of the USSR Ministry of Installation and Special Construction Work. Their erection in poorly accessible, sparsely inhabited regions of West Siberia and the northern part of the Central Ural is associated with sizable difficulties.

"The obstacles which nature placed before the builders and the tight schedule for installation of the compressor stations forced us to seek new technical concepts," explained the association's director, A. Raykhlin. "We found it absolutely necessary to place manufacture of the pipe units on an industrial foundation, and to reduce, to the extent possible, the amount of assembly and installation that must be done at the assembly site, where hundreds of tons of gas pipe fittings and parts must be assembled and welded beneath the open sky. The engineering services kept having to solve more and more new problems."

Semiautomatic welding in a carbon dioxide medium using a consumable electrode was used here for the first time to manufacture high-pressure pipeline units. And multiple gas burners designed by specialists of the Uralmetallurgmontazh Trust were used to maintain the required temperature. The plant's innovators manufactured a special roller-equipped support which helps to join pipes to parts of complex shape.

Owing to mechanization, the labor-intensiveness of work done at the first Ivdel station, which was installed by the Uralmetallurgmontazh Trust, was reduced by 40 percent.

A new compressor station is growing within the Ural forest--the heart of the gas pipeline. Installers are working on it at full steam. And the wheels of long flatcars are rattling over the railroad from Sverdlovsk to Ivdel, carrying modular equipment characterized by high plant readiness to the construction site. Only two butt joints will have to be welded to install the station into the production flow.

11004
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COMPRESSOR STATIONS

PERM OBLAST CONTRIBUTES TO PIPELINE

Moscow PRAVDA in Russian 10 Oct 82 p 1

[Article by PRAVDA correspondent V. Cherapanov: "The Tests Were Passed "]

> [Text] "Manufacture all of the equipment needed for timely commissioning of the Urengoy-Pomary-Uzhgorod export gas pipeline ahead of schedule and with high quality": This is the slogan under which the collectives of many industrial enterprises of the Western Ural are competing in their effort to complete the orders for the shock construction project.

The Perm "Motorostroitel'" Production Association imeni Ya. M. Sverdlov received the following telegram from Kazan: "The first NK-16-ST gas turbine engine, in which parts furnished by you were used, has successfully completed its tests and was shipped to its place of use...."

The motor building collective had been waiting for this news impatiently. The fact is that it was given the assignment to work in cooperation with other enterprises on the drive system of propulsion units for gas compressor stations and to organize production of a number of the associated units and parts. An NK-8 aircraft engine that had served out its useful life was adopted as the basis for the design. Of course, a significant amount of extra work had to be done to adapt it for operation in unusual conditions and to convert it from liquid to gas fuel.

Process engineers and designers handled this task excellently, and they issued the necessary documentation to the shops in short time. The first lot of associated parts was manufactured and shipped for assembly to the Kazan Motor Building Association 2 weeks ahead of schedule. But the final evaluation of the articles had to await the tests. And now the motor builders knew that all of the units and parts were working well. They began series production of parts for the drive system.

"Completion of this honorable order has been placed under constant control by our collective," explained the secretary of the association's party committee, B. Pozharskiy. "Supply of associated parts on schedule is a factor mandatorily considered when prizewinning places are awarded in the socialist competition."

The collective of the Lysva Turbogenerator Plant must design a powerful engine with adjustable rpm. What is it needed for? So that in even the most unexpected situations, when gas pressure increases or falls sharply, the gas flow could be maintained uniform and accidents could be prevented.

"In principle, such engines can quite adequately replace gas turbines at pumping facilities," said the plant's chief engineer S. Timoshok. "The technical documents for the new engine have already been developed, the tools have been manufactured, and soon it will be time to begin the engine's production."

The collectives of a number of other enterprises in the Western Ural are trying to satisfy the orders of the most important construction project better. Powerful pipelayers with a loading capacity of 12 and 35 tons are being delivered to the section of the route between Urengoy and the western border by the Ocher Machine Building Plant. In the fourth quarter it will ship not less than 90 such pipelayers. The Perm Telephone Plant is manufacturing an additional lot of TA-200 shaft telephones and other products for builders of the export gas pipeline.

Specialists of the Perm "Uralgiprolesdrevprom" Institute completed plans for well-provided settlements that will be erected beside the gas compressor stations. There are plans to build children's nurseries, schools, stores and dining halls in these settlements. They will be furnished with intercity communication. Some of the residential buildings for builders of the transcontinental gas main will be built by the collective of the Perm Residential Construction Combine.

11004
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SHAFTS FOR GTN-25 GAS PUMPING UNIT FINISHED

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 9 Sep 82 p 1

[Article by O. Rogozin: "Ahead of Schedule"]

> [Text] On the right bank of the Neva, in shops of the "Leningradskiy Metallicheskiy Zavod" Production Association, final processing of the shaft for a turbine to be included in the "GTN-25" gas pumping unit has been finished. This shaft is now being ferried to the left bank--to the Nevskiy Plant imeni V. I. Lenin, where assembly of the first machine for the Siberia-West Europe gas pipeline has begun.

Processing shafts for a high-power gas turbine unit is a laborious operation. Shafts of two types are needed here--for the turbine and for the supercharger. All shafts are being processed by a Komsomol youth brigade working at the rotor shop of the Metallicheskiy plant.

By the way, at the time when this shop received its first intermediate products for the "GTN-25," Nikolay Malakanchikov's youth brigade did not exist yet. There was simply a group of young workers, each of whom was concerned only with his own part of the work. The new order united the lads: On 1 September the brigade celebrated its one-month birthday. It celebrated it with honor: The young workers surpassed the plan (the main order in the plan was for units of the gas pumping assembly).

The shafts of the main "GTN-25" machine turned for several days beneath the cutting tools of the turners. Twice these multiton parts were mounted on the lathe. The first time they were black, covered with oxides created during forging. After being worked on the lathe they were sent to the furnace--to reduce the internal stresses. Then the shafts were returned to the turners for final processing. Now these units are completely ready for shipment to the Nevskiy Plant for assembly in the testing shop.

The first problem the turners encountered was the uneveness of the first six intermediate products. After forging and heat treatment, the long shafts sagged as they cooled. Just try turning uneven "humped" parts!! The shop newspaper, the KOMSOMOL'SKIY PROZHEKTOR, was able to come up with a solution to the problem: Now the intermediate products will be placed in special devices for cooling.

An enormous amount of work fell upon the shoulders of the plant's designers and process engineers. The drawings and specifications of the new machine were completely translated into the norms and standards of the plant by the "Turbina" Special Design Office.

"We had to draw up materials lists for hundreds of thousands of parts and select the materials and intermediate products to be used in production," said Andrey Zhukov, a young designer.

"And we had to prepare hundreds of drawings," added his colleague, Sergey Ryabov. "But all of this is now far behind us. We are now planning testing units for the individual units and structures."

There is not much time left before testing of the pilot model.

Every morning the "GTN-25" production staff convenes in the office of the Metallicheskiy plant's general director. Every day Sergey Babenko, the shop Komsomol organizer and foreman of the rotor section that is turning out the shafts, checks the work schedule. According to his estimate the Komsomol brigade is 6 days ahead. Every evening the plant's planners summarize the results.

Assembly of the first machine has already begun on the other side of the river--at the Nevskiy Plant. To hasten its production, the Nevskiy and Metallicheskiy plants are working on parallel schedules. Shops of the Nevskiy Plant are manufacturing the compressor units of the machine while the Metallicheskiy plant is making the turbine parts.

The first Leningrad gas turbine supercharger will be finished in January.

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PIPE CLEANING, INSULATING MACHINE SHIPPED TO URENGOY

Leningrad LENINGRADSKAYA PRAVDA in Russian 7 Sep 82 p 1

[Article by O. Berkutov, chief, assembly shop, Leningrad Machine Building Plant: "Combines for Urengoy"]

[Excerpts] Making combines to clean and insulate piping for gas mains about a meter and a half in diameter is not a simple thing. It was not that long ago that we began producing them. But now, rush delivery of a large consignment of such machines in support of construction of the Urengoy-Uzhgorod gas main is a doubly complex task. This is precisely the task which the plant collective posed to itself in response to an appeal from the party. Here is what we wrote down as one of our socialist pledges in honor of the 60th anniversary of the USSR's formation: "Complete the annual program for deliveries of combines for 1,420 millimeter diameter pipes in the third quarter of the current year."

One could hardly hope to find a person at the enterprise who would not understand how significant the fastest possible completion of this task is, given the evolved international situation. Many of the leading producers confirmed the common desire to keep the promise at workers' meetings in our shop and in other subdivisions of the plant. This decision necessitated mobilization of all creative effort, of all reserves. After all, the work volume grew dramatically everywhere. In our machine assembly shop, we could not do without mutual assistance. The common concern united the people. Mutual assistance among the workers manifested itself especially clearly in a competition organized by communists. There are many outstanding specialists in the brigade led by party member V. F. Tyrkin, which is responsible for general assembly of the machines. As an example they came to the assistance of workers of the metallic parts shop when it found itself short of manpower at a time when 20 sheets had to be worked into frames for the machine rotors. The members of this brigade took on the job of drilling the holes and cutting the threads.

Our regular assemblers did many machine tool jobs in aid of comrades in other shops, processing shafts, brushes and the scrapers for the combines. In this way they hastened the delivery of parts to the final assembly operations. Within the shop, brigades representing different sections manifested constant concern for meeting the tight assembly schedule.

Many designers and process engineers are also laboring with initiative. They are making an effort to reduce the amount of labor required to produce the machine units, and they are attempting to make their production easier. It was found during assembly of the combines that the reduction gear, which had a design that the brigades believed to be inadequately developed, was slowing down the work. Soon the engineers found another design for the unit, and they replaced the reduction gear by a series-produced motor vehicle gearbox, introducing a new power take-off unit into it. The labor expenditures decreased dramatically and the machine became more economical.

A large consignment of machines for Urengoy came into being through the collective efforts of the laborers and engineers, and through their creative cooperation. Here as in all other matters, the rayon CPSU committee and the city and oblast party committees offered us assistance. Laborers of the plant and the shops, including ours, completed their important pledge by as early as August, more than a month before the promised deadline. We shipped the last combines out in the middle of the month, completing our annual plan.

Now that our machines are en route to Tyumen Oblast, we need to think about the experience we acquired achieving our most important pledge. We can note that working friendship, a feeling of collectivism and the ability to organize a socialist competition underwent a good test of strength.

But the work at this forced pace showed that in working toward a set goal, we often still rely more on enthusiasm than on engineering, organizational and technical measures. Many weak sides were revealed in production organization, ones which require priority attention from all of the enterprise's services, so that nonproductive outlays of work and resources could be excluded in the future. Unfortunately, there were many such outlays.

Rhythmicity is the first problem we need to talk about. If all parts had been delivered for assembly regularly, we need not have conducted crash campaigns, and we could have done more without resorting to overtime, something which we could not do without for the moment.

There are weak sides in the system for delivering raw materials and intermediate products, coordinating the different production units and preparing the production lines, and they must be strengthened in every possible way. Work is being done in this direction. But as an inspection showed, the effort is still inadequate. We are often let down by our suppliers of rolled metal--metallurgists in Cherepovets. Moreover we ourselves are sometimes in no hurry to complete measures intended to improve production. As an example construction of the painting and finishing building has dragged on for a long time at the plant. Had this building been finished sooner, we could have transferred a significant number of the associated operations out of the assembly shop area.

As the producers see it, the planners of the new pipe cleaning and insulating combines should show more concern for reducing the weight of the machines. The metal content of the largest of them is, in our opinion, excessive, which is not at all in keeping with the objective of all-out economization of metal.

Plant specialists raised this important issue before specialists of the "Gazstroymashina" Special Design Office, which is located in our city. I would hope that the practical results would be soon in coming, so that equipment being produced for gas pipelines being built in the country would be typified by even better economic and operating characteristics.

Our plant is the country's sole supplier of gas and petroleum pipe cleaning and insulating machines. This makes our responsibility before the creators of the manmade gas and petroleum rivers even greater, and it requires the collective to make an even more significant contribution to solving the fuel and energy problem. And although our clients have no complaints about the plant's products, we have much to do to achieve the fullest possible use of the potentials of every productive unit for further improvement of all indicators. The high jubilee pledges and the experience acquired in the course of their satisfaction encourage the collective to do just this.

11004
CSO: 1822/25

RELATED EQUIPMENT

KIROVAKAN SUPPLIES INSTRUMENTS TO GAS PIPELINE AHEAD OF SCHEDULE

Yerevan KOMMUNIST in Russian 1 Oct 82 p 1

[Article by KOMMUNIST Special Correspondent N. Mesropyan: "For the Siberia-Uzhgorod Gas Pipeline"]

[Excerpts] The inscription on the wooden box read, in large letters: "FOR THE WEST SIBERIA-UZHGOROD GAS PIPELINE." Each day 10-15 such boxes are loaded for Kirovakan. It is known at the railroad station that these boxes contain cathode stations intended for the country's most important construction project, which is why they are shipped on priority, without the slightest delay.

"Make deliveries ahead of schedule"--this is the slogan of laborers of the Kirovakan "Avtomatika" Plant.

This is the second year the "Avtomatika" plant has been producing cathode line stations. They were designed by the All-Union Scientific Research Institute for Planning and Construction of Main Gas Pipelines with the active participation of Kirovakan instrument makers. Sergey Dilanyan, chief of Machine Assembly Shop No 211, distinguished himself especially. It was precisely owing to his proposals that a number of innovations were introduced into the design which made it possible to completely automate the station and improve it qualitative indicators. Now the the "Avtomatika" plant is the country's sole enterprise producing stations providing fully automatic cathode protection. They are intended to protect pipelines from stray currents.

It was resolved at a workers' meeting that 3,600 cathode line stations would be manufactured and shipped to the route before the end of the year, instead of the planned 3,400. The shop collective is honorably working on its high socialist pledge, and it is ahead of the already-tight schedule. The best assemblers, Shaliko Kazaryan and Norik Ayvazyan, who systematically surpass the plan by 20-30 percent, are in the lead of the competition.

There is another assembly shop in this enterprise--No 209, which also fulfills orders for the gas pipeline under construction.

"When the sanctions of the U. S. administration became known." explained Gerbert Tovmasyan, the chief of the enterprise's production-dispatch department, "the collective of this shop assimilated mass production of two types of blocks for gas pumping stations in record time, literally in just a month."

The blocks produced by shop No 209 are intended to measure and control the operating conditions of the machine units contained in gas pumping stations. Within a short time the best assemblers--Karine Oganesyan, Roza Gevorkyan, Arshak Marukyan and Al'bert Gyurzadyan--assimilated the most complex and critical production processes associated with assembly of the units, and now they have the privilege of attaching their personal brand to the units. The shop collective promised to complete 4,800 blocks of the two types before the end of the year--250 more than planned.

11004
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CHEBOKSARY T-330 TRACTORS SATISFY CONSTRUCTION NEEDS

Leningrad LENINGRADSKAYA PRAVDA in Russian 17 Sep 82 p 1

[Article by N. Osipov: "Cheboksary Tractor Builders"]

[Excerpts] Ten years have passed since an excavator dug the first bucket of earth from a vacant plot on the southeastern outskirts of Cheboksary, initiating construction of an enormous enterprise--the Cheboksary Industrial Tractor Plant. Now the ChZPT--this is the abbreviation by which the plant is referred to locally--is an operating enterprise.

Series production of T-330 tractors intended for bulldozers and their modification--the TT-330, intended for pipelayers--has been organized at the enterprise.

A. Skrebtsov, the plant's chief engineer, recalls how these giant tractors were created. Even to him, an experienced specialist who had devoted many years to Soviet tractor building (he had been chief engineer of the Volgograd Tractor Plant prior to this), the closely related Cheboksary tractor turned out to be a tough nut to crack:

"Creation of the T-330 forced us to simultaneously solve many complex problems," he explained. "We needed new brands of metals, rubbers and lubricants--the old ones would not last long enough under the high loads typical of heavy tractors. The design of the machine and the quality of the engine had to be raised to perfection, the procedures for producing numerous parts and units had to be worked out, and the reliability of these parts had to be raised. After all, the T-330 must toil both in Siberian frosts and in Central Asian heat."

A large number of the country's leading institutes came to the aid of the plant. New brands of steels, oils and rubbers capable of operating at high loads and in all temperature conditions were obtained. Simultaneously the plant was outfitted with the most sophisticated equipment--equipment which elicits the delight of many foreign experts visiting the ChZPT. Thus specialists of "Caterpillar Tractor" (USA) and "Kamatsu" (Japan) noted that in terms of technical level, the Cheboksary plant was superior to their enterprises.

A sophisticated production base is a guarantee of highly effective work. But only people able to handle this equipment can achieve high results. Young people make up the backbone of the plant collective, which totals 15,000 people. The average age of the workers is 35 years. I spoke with many producers and asked about their biographies. Born in a small village in the Chuvash ASSR, graduated from high school and a vocational-technical school, served in the army, got a job at the plant, and now studying in the night school department of the tekhnikum (or institute)--such is the typical portrait of a young worker at the plant.

"What does your collective have to say abour Washington's change in policy?" I asked of the chief engineer, A. Skrebtsov.

"We can have but one reaction--increasing our own production. This year we will already produce twice more vehicles than we did last year. Now the plant is introducing new output capacities, and building new shops. At the beginning of the next five-year plan, when the ChZPT will attain its planned output capacity, it will become the world's largest supplier of heavy tractors.

"Incidentally, our pipelayer is already more convenient and easier to control than similar American machines," said the plant's chief engineer. "The sensation of noise and vibrations in the cab of the Cheboksary tractor is much lower than in a Caterpillar."

Hundreds of tractors born in Cheboksary are laboring today over the vast expanses of the Soviet Union. They are helping to extract oil and gas, coal and iron ore, to build plants and to lay pipelines. And a new machine, one that is a time and a half more powerful than today's, is being created in the enterprise's experimental shop. The first models have already been assembled. They are now undergoing testing. The Cheboksary plant is attaining new summits of technical progress.

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KATEK ADMINISTRATIVE PROBLEMS DESCRIBED

Moscow STROITEL'NAYA GAZETA in Russian 25 Aug 82 p 2

/Article by A. Prigodich, STROITEL'NAYA GAZETA correspondent, Irkutsk Oblast: "Out-of-Town Model"/

/Text/ In the Bratskgesstroy Special Administration preparations were being made for an important event. A group of specialists wes getting ready to fly to the city of Sharypovo, which is in the area of the Kansk-Achinsk Fuel and Energy Complex in Krasnoyarsk Kray. Their task included the establishment of one more major subdivision of Bratskgesstroy, a construction administration (with the rights of a trust) called KATEKStroy. But no expressions of delight were heard on this occasion. On the contrary, melancholy ruled in the administration.

And it was, by the way, only a few years ago when subdivisions were established at the sites of the Boguchanskaya GES, also in Krasnoyarsk Kray, and the Neryungrinskaya GRES in Yakutia. There was fraternal pride: we are going beyond the limits of the bratsk-Ust'-Ilimsk Territorial Industrial Complex.

But what has happened? Why has pride been transformed into dissatisfaction?

The problem was that when the Bratsgesstroy came to KATEK from its industrial base, rail cars loaded with materials and other items were already going not just to the Boguchanskaya GES and the Neryungrinskaya GRES, but also to a good dozen other major construction sites beyond the limits of the actual territorial production complex. They were going thousands of kilometers in various directions. In particular, 947 cars loaded with freight were sent to the Far East during January-April of this year alone. A substantial amount of such production also went to Taymyr, Surgut and other places. The parts for large-panel construction of one residential building equipped for northern climatic conditions were even sent by a request of the Ministry of Power and Electrification to the Smolensk Atomic Power Plant! They were, incidentally, to meet up with reinforced concrete, which the chiefs sent from the south of the European part of the country to the Irkutsk sector of the Baykal Amur Mainline.

The Bratskgesstroy finally managed to free itself of the Smolensk Atomic Power Plant, And, in the future, in should be assumed that the expensive reinforced concrete of Eastern Siberia will not be transported to the West from the Urals. And people? How should the surprisingly irrational utilization of skilled personnel, who are working at many of the national's construction sites today, be dealt with? For example, 158 people were sent on temporary duty to the Kursk Atomic Power Plant and 155 to the Southern Urkainian Atomic Power Plant, etc. What this patching of personnel holes costs the state is not difficult to calculate.

In the first place, specialists who are sent to warm regions retain, on the basis of their permanent work place, a decent salary with a zonal coefficient of 1.4 and five northern 10-percent supplements. There is an even more serious reason for doubting whether these temporary duty stints are justified. Let us recall that there are considerable expenses involved in attracting manpower to Siberia; detachments are mainly filled with young people inexperienced in construction work. Subsequently these same people, who now have moved up the wage scale to the higher pay categories for more skilled workers, return on temporary duty to their home areas, retaining the right to receive average wages with the zonal coefficient and the northern supplements. There is no production necessity by which the Ministry of Power and Electrification can justify this kind of economic policy.

Maybe here, at the Bratsk - Ust'-Ilimsk Territorial Production Complex, there is nothing more to do? Hardly. Plans call for the introduction of capacitites for the production of 9,900 tons of rosin per year at the Ust-Ilimsk Forestry Production Complex. The estimated cost for the construction and installation work at this priority complex amounts to 3,680,000 rubles and as of the first of May only 480,000 rubles has been assimilated. By the end of the year a unit for production of technical-grade wood chips with a capacity of 225,000 cubic meters should be introduced. And again the same picture emerges: with an estimated cost for construction and installation work at the start-up complex amounting to 3,860,000 rubles, only 630,000 rubles were realized. In general, both facilities are in danger of not being completed within the deadlines which have been established. The nearly finished start-up complex for the production of chlorine and caustic soda at the the Bratsk Forest Industry Complex is not being accepted for operations because the local treatment facilities for the chlorine plant were not built in time. The opening of capacities at the Kapaevsk Forest Industry Enterprise, and at a number of other facilities, is also behind schedule.

The main reason for this situation is the lack of manpower at Bratskgesstroy. It is strange, of course, to hear something like this when you know that Ministry of Power and Electrification personnel are scattered throughout the entire country. And now the ministry has set itself the task of increasing the collective of the new KATEKStroy Administration to 1,300 by the end of the year. And KATEK, like many other construction projects, requires not just anybody, but highly skilled specialists. And there are not enough of these even at the building industry plants of Bratskgesstroy.

At the silica brick shop at the No 1 Reinforced Concrete and Concrete Products Plant at the Bratskzhelezobeton Combine, I saw in in front of the autoclave more spoiled than unspoiled raw materials, and I asked, G. Shmyrunaya, a master worker, what the problem was.

"This requires skilled work here," she answered, "and instead of five crane operators, we have only two, and we have to go to other work sites frequently to get help. However, the crane operators, who replace one another in quick succession, do not succeed in learning to use the raw material carefully on the adjustable trays.

Other plants in the Bratskzhelezobeton Combine have quite a few similar difficulties, although in general it continues to provide quite a powerful industrial base for Bratskgesstroy. For the next year output worth 76 million rubles will be produced here. The problem is that more than 80 percent of this output will be produced in Bratsk itself and less than 20 percent will be produced in all the other regions taken together.

In other words, the two production lines are moving in different directions: the industrial base is concentrated in one place, and the construction-installation subdividions have gone further and further away from the Ust'-Ilimsk Territorial Industrial Complex. Today this leads to significant losses due to the shipping of parts, materials and other items.

Many hundreds of cubic meters of reinforced concrete have been lost on the highway between Bratsk and Ust'-Ilimsk. But the plans do not call for the establishment in Ust'-Ilimsk of their own industrial base for residential building. There have been delays in starting construction of a large panel housing construction plant and a plant for the production of reinforced concrete items, in Kodinsk at the Boguchanskaya GES. Bratskgesstroy decided to limit itself to a minimal industrial base which is like an army engineering corps settlement in Neryungri. There is still no clear idea of what kind of construction industry enterprises should appear in KATEK, in the Far East, where the recently organized Komsomol'sk Energostroy Trust belongs to Bratskgesstroy.

And so the Ministry of Power and Electrification is counting, as before, on the industrial base at Bratsk, and on shipments that take place over thousands of kilometers. Is this correct? Although the question is obviously rhetorical, it is nonetheless not a simple one because it is organically linked to another: what should Bratskgesstroy be like in the future?

"With its status as a special administration, the head apparatus of Bratskgesstroy is obligated to carry out operational leadership of all its subdivisions, without exception, including those located in the Far East at incredible distances," says A. Zakopyrin, head of Bratskgesstroy. "This is an unrealistic task, but we must carry the responsibility for its fulfillment. In general our opinion is that given the lack of change in its existing status, the activities of the special administration must be limited to the facilities located in Irkutsk Oblast and Krasnoyars Kray. Or, in the opposite case, Bratskgesstroy must be given the status of an all-union association. Then its chief apparatus could work more on the future, while the operational leadership of the subdivisions could be fulfilled by its local headquarters."

I happened to hear identical judgments expressed by each of a large number of leading specialists at Bratskgesstroy with whom I discussed the subject of this article. And, while one cannot judge the situation with regard to the others, the Bratskgesstroy fully deserves the status of an all-union association. Nonetheless, Bratskgesstroy is called only a special administration.

It is clear that there are hidden here some departmental interests of the Ministry of Power and Electrification. If that is so, they are not in line with territorial interests, especially those of the Bratsk-Ust'-Ilimsk Territorial Production Complex. And, it would seem, they are not in line with state-wide interests, because the special conditions for financing and paying labor at the important industrial facilities of Siberia and the Far East must not serve to cover up administrative inadequacies in other regions of the country.

8543
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'IZVESTIYA' ECONOMIC OBSERVER REPORTS FROM NEW URENGOY

Moscow IZVESTIYA in Russian 6 Sep 82 p 2

/Article by V. Romanyuk, IZVESTIYA economic observer, New Urengoy and Moscow: "Flowers from New Urengoy"/

> /Text/ The CPSU Central Committee and the USSR Council of Ministers approved an initiative by the labor collectives of a number of ministries to put into operation on time the main Urengoy--Pomary--Uzhgorod gas pipeline, despite the discriminatory actions undertaken by the U.S. administration. A weighty contribution to the provision of gas deliveries, including those for export, is being made by the gas workers of New Urengoy, a city which is growing like the legendary bogatyr of Russian folklore, in the polar tundra.

Grey sand and whitish reindeer moss on the shores--swept by the Arctic wind--of the Yevoyakha and the Sedoyakha, the rather squat barracks and masses of small mobile homes--that is how New Urengoy looked from the window of an Mi-8 helicopter a year ago, when we flew over the site of the deposits along the dotted line of the near-by gas collection installations. In that year much has changed in the face of the city, its silhouette is different; the signs of its maturity are becoming more and more visible.

We are standing with V. Dumanskiy, the chief engineer of the Lenurgengoystroy Trust, on the roof of a nine-story building, in the very center of the building site for the new microregion. Below us, finishers are hurrying about on the floors, bringing into the building the last blocks of foam concrete which will be used in heating the structure. In front of us sparkles the edge of the Sedoyakha River; the buildings on Leningrad Street will soon reach to the very banks of the river; beyond it there appear new blocks of residential buildings, which become lost in the blue haze.

Before coming to New Urengoy, V. Dumanskiy worked as the chief builder for Leningrad DSK-3 /House Building Combine/; he put up buildings in the Shuvalovo-Ozerki, Southwestern and Rzheva-Porokhovaha Regions. He came to New Urengoy with the first detachment. Victor Antonovich recalls that no one believed that they would be able to open the first building in just one year. But the Leningraders kept their word although in the course of the work they had to form brigades and resolve problems related to the delivery of panels for the buildings.

The collective which was entrusted with this responsible work thousands of kilometers from Leningrad is young. The head of the trust, A. Domanik, is 42, the chief engineer, V. Dumanskiy, is 35, and one of best brigade leaders A. Koryakin, is 33. Anatoliy Koryakin, and his wife Alvetina, who is an engineering estimator in this sector, have traveled a great deal to the various construction sites.

The Leningraders jealously follow the successes of the Moscow builders at the Siberian construction sites. "After all, said A. Koryakin, citing his own reasons, "the Muscovites in Nizhnevartovsk and in Tynda had a railway immediately, and we had to begin in Severobaykal'sk and New Urengoy without any rails. And the climatic conditions are more difficult: the winds and the frosts are very tiring."

It is difficult to overestimate the labor heroism of the Leningrad builders, who have this vital trust in a literally empty place, thousands of kilometers from their production bases. Ten or more trans-shipments are necessary to deliver the panels, which are manufactured at the Leningrad DSK-3; these panels are sent by a complex transport route to New Urengoy from Tobol'sk in the South and Labytnangi in the West. And already the first building is beginning to go up on the second side of the street, and one can envision the wide street which will be laid here, a prospect 120 meters wide. The Leningraders took upon themselves to open up 70,000 square meters of living space this year; this is 20,000 more than called for by the plan. In order to speed up the rate of work, they ordered from Leningrad four more tower cranes.

The local builders still have to master the Leningrad work methods, and not only in the organization of installation. The Leningrad home builders supply maximally standardized parts; residential buildings in the Leningrad series contain a total of 35 designated parts, while the Nadym builders supply 270, which is 8-fold more.

Thanks to the Leningraders, the city is pushing out its boundaries at a rate which is most heroic, especially if one takes into account the severe Arctic conditions and the difficult transportation network. In 1979 a total of 13,000 square meters of living space were opened here, and in the very next year 68,000, and then 106,000. The plan calls for the introduction of 142,000, while the obligations undertaken by the city stipulated 200,000 square meters! A schedule has been developed for the complete finishing and landscaping of the city.

At the gorispolkom they reported to me that the city is growing at such a rate that in the last year and a half the population has doubled. Further, the problem of accomodating new arrivals is not so acute. One of the latest gorispolkom decisions was to stop the growth in the mobile-home area.

Entry into the temporary barracks has been forbidden, and one of them is being prepared for demolition. A year ago the temporary shelters constituted the basic housing stock of New Urengoy. Today the situation has changed sharply. Well-constructed buildings made of wood or panels comprise a solid housing fund of 240,000 square meters of living space. The parts for eight-story buildings which will house dormitories have started to arrive from Surgut.

For a long time the Torch Club was the only cultural center in the city. With the opening of an athletic-sports complex, a social center, the "Rovesnik" movie theater, a large number of sports groups have started up, and a choir and ball room dancing school have started to hold sessions, too. Much has already been said about the infrequency of visits made to the North by famous entertainment collectives, and the tour routes of popular artists take them only to the major, built-up cities of Siberia. By rights they are much more needed here, in the polar cities.

A. Dybrin, the chairman of the gorispolkom has just flown in from Leningrad, where he received assurances from the Leningrad Soviet and Glavleningradstroy [Main Administration for the Housing, Civil Engineering and Industrial Construction of the Leningrad Gorispolkom] that the rate of construction in New Urengoy will be stepped up, and the building series will be improved. There is agreement, too, on the building of a children's combine in brick with places for 280 children; the combine is not part of the Leningrad builders' program. Alim Grigor'yevich looks to the future with optimism. In the first place, the arrival of the railway in Urengoy will mean the end of seasonality in the delivery of freight; the panels will come from the city on the Neva without multiple trans-shipments. In the second place, enormous work on the engineering networks has been completed. A year ago the site was torn up with trenches, and today questions are being raised about the power and heat supply to the new buildings. The water supply system is fully operational, a powerful boiler house has been built, commercial premises for stores have doubled, a bread plant turns out 20 tons of bread a day, and a milk plant has just been accepted for operation. Today the city's silhouette is determined by schools, department stores and a children's combine called "Little Flower of Urengoy," as well as a many other attractive buildings finished in the modern architectural style.

Subsidiary farming for the city is being organized. Under construction are greenhouses extending over 6,000 square meters, a pig sty for 1,500 pigs, a hen house for 16,000 laying hens. Operating on the basis of comprehensive gas preparation, the greenhouses provide green onions, cucumbers and tomatoes, while the pig sties which have been built here provide meat for public consumption.

The international brigade of Stanislav Leshchuk has been doing excellent work in the construction of the city. "I've had good luck with the fellows," says the brigade leader. "We've got a good crew, reliable, good-hearted." Seventy members of the brigade and seventy lives. S. Leshchuk himself is from the Ukraine, a Dnepropetrovsk man. The brigade includes others from the Ukraine: V. Vakhnenko, V. Krivenko, and A. Fedyanov; R. Gerasim is from Belorussia and P. Georgiu is from Moldavia. Sultan Agaygil'diyev is from the Northern Caucasus and N. Garifullin is from Tadzhikistan.

One of the best brigades is headed by P. Baryayev, who is a deputy to the USSR Supreme Soviet. The brigade has worked for four years with almost exactly the same members. The collective includes people who have come from many republics: there are Russians, Ukrainians, Estonians, Tatars, Bashkirs and Mordvinians.

And there is another reminder of the international friendship of peoples in our country. On the street named after the magazine SMENA a large building with a bright facade stands out: it is the library for children and young people. SMENA conducted a nation-wide campaign to collect books for this library. And now several tables are heaped with volumes from newly-arrived packages that originated in the Ukraine and major Siberian cities, in Bashkiria and Moscow. The librarian, M. Balan, who is a very young girl, told us that the library already has more than 40,000 volumes and about 3,000 young patrons.

A multitude of urgent matters fill the work day of the gorispolkom chairman. We met at eight in the morning, an hour before the start of the working day. But even at this early hour there was an almost uninterrupted stream of telephone calls.

Alim Grigor'yevich Dybrin came to work in the soviet after previous employment in the economic sector. In the course of his work he has had to learn about a new set of issues; he has had to help the economic specialists avoid a narrow, departmental approach when it comes to city interests. But sometimes his joy at all the new openings and starts is mixed with bitterness, when he comes up against callousness, or a reluctance to put aside narrow, departmental interests.

Facilities in the social, cultural and service spheres determine to a great extent the appearance of the city. But at present not everything that has been built in New Urengoy is pleasing to the eyes; instead, some buildings remind one of temporary structures, which indeed they are in essence. But would it not be better to start with major constructions, with well thought out planning and architectural decisions? The Leningrad builders did not take upon themselves the job of comprehensive development, and no such task was put before them. It would seem that the central regions of the country could help with the development of this young polar city, especially in establishing preschool institutions, sports complexes and entertainment buildings.

At the first stage, when the original field engineering settlement was being established, the decision was made to go with wooden buildings, panelboard and block construction. These squat buildings, scattered capriciously along the bank of the Yevoyakha, look extremely unimposing, creating the impression of a quickly thrown together shelter. Kremchung and Ural tractor trailors rumble through the city unimpeded and frequently without any particular need. There have been delays in the establishment of a base for the construction industry of New Urengoy. We had a conversation about this a year ago, but even now no start has been made on construction of a plant to produce reinforced concrete parts, or a concrete solution unit.

The 26th party congress defined clearly the demands which the economic managers must meet: no production success can cover up for inadequacies in provisions for people: no reports on successes in production should be accepted if they are not coordinated with the resolution of problems related to the social and service arrangements for the working people. In exactly the same way the comprehensive development of New Urengoy must not lag behind the development of the Urengoy deposits; it must not be slower than the rate of growth in production of the blue fuel.

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GENERAL

HOUSING FOR PIPELINE BUILDERS DESCRIBED

Moscow SOVETSKAYA KUL'TURA in Russian 7 Sep 82 p 1

/Article by A. Gil'ts; Perm Oblast; "Along the Mainline"/

/Text/ Today collectives of many enterprises and institutions in Perm Oblast are participating actively in the fulfillment of responsible assignments related to the construction of the Urengoy--Uzhgorod pipeline. For example, here is what M. Zhuravlev, chief planning engineer of the Uralgiprolesdrevprom Institute /Ural State Institute for the Planning of Establishments of the Lumber, Woodworking, Wood-Chemistry and Paper Industry/, says: "Our institute is engaged in planning residential settlements at the compressor stations of three pipelines: the Urengoy--Uzhgorod, the Urengoy--Tsentr and the Yamburg--Yelets lines. These are the Tayezhnyy, Bobrovskiy and Oktyabr'skiy settlements. They are all located in Tyumen Oblast.

The settlements which are being planned include well-equipped buildings, kindergartens with places for 100-140 children, schools with places for 400 pupils, stores and cafeterias. Residents will be provided with long-distance telephone communications and television. Roads covered in concrete and treatment installations answer the latest needs in environmental protection. By the way, the forest remains untouched even in the settlements themselves.

It seems that the new arrivals will be satisfied. The institute has worked out standard designs for buildings, which will now have triple glazing, which extends to the verandas. The buildings are designed to withstand severe frosts--down to minus 50 degrees. The Perm Home Building Combine should participate in the building of the settlements.

Cultural workers from the Kama area are also making their significant contribution to the general cuase. The collectives of amateur artistic groups in those regions of the oblast through which the gas pipeline runs have set themselves the goal of making the daily life and recreation of the builders as valuable as possible.

A library has already been collected for the builders of the gas compressor station in Gornozavodskiy Rayon. The residential settlementhas a modern movie projector, and every other day feature films and documentaries are shown in the dining hall. A showing of films devoted to the 60th anniversary of the formation of the USSR has been organized.

The teachers and pupils of the Gornozavodsk children's music school have made the builders familiar with the lives and works of many outstanding performers and composers. The artistic collective of the House of Culture at the cement plant also performs regularly before the builders. They recently had as guests the children's wind orchestra, winner of the Perm Obkom Komsomol prize.

The city bookstore organizes regular visits to the builders' settlement for on-site sales of fictional, as well as political and technical works. There is also a Soyuzpechat' kiosk. The propaganda brigade of the Cement Worker House of Culture" appears before the builders.

8543
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EXPERIMENTAL BOILER PLANT DESCRIBED

Moscow SOTSIALISTICHESKYA INDUSTRIYA in Russian 13 Aug 82 p 1

/Article by A. Alekseyev, SOTSIALISTICHESKAYA INDUSTRIYA correspondent, Elektrostal: "Heat Factories on the Conveyor Belt"/

/Text/ "What does it mean to install a boiler," says V. Semanyev, director of the combine. "First of all you have to join together with ducts two spaces--the upper and the lower. And for this you have to clean off on the order of 1,500 ends and the same number of inlets. In addition it is essential to line the unit with thermal insulation, cover it with a steel shell and, finally, paint it. And if all this work is done on-site, it takes two months of handle. In the shop the same operations take only three or four days.

In the first place we are not dependent on the weather conditions. In the second place we have everything we need for every operation: stationary compressor stations, cleaning equipment, a special unit for assembling and testing... The specialization of the installers is also important. There you have speed and high quality.

The experimental boiler-building combine, as this Elektrostal enterprise is now called, had its origins in the Mosoblteplomontazh Trust. Its birth was by no means accidental. In the Moscow area alone, it is necessary to put into operation every year about 200 boilers, big and small, in cities, housing projects, sovkhozes and recreation centers. The most diverse construction and installation organizations have been forced to take upon themselves at time the extremely difficult task of building, adjusting and starting up boilers. In addition, there are more than 200 (!) organizations which supply parts or services necessary for a complete boiler installation. How can people stay on top of the situation in case of missing deliveries?

On the other hand, a boiler is a relatively complicated technical complex. There is good reason why the Gosgortechnadzor /State Committee of the Council of Ministers for Supervision of Industrial Safety and for Mining Inspection/ organs are so fussy about the quality of installation. And this means that before the cherished flame is lit in the fire box, the installers will be dripping with sweat. And for this reason, the customers were incredulous when the combine specialists announced that they would install a major boiler system in Ruza in a period of two weeks. After all, the very minimum required according to the strict norms for this work is a period of a year and a half. But the system was ready for operation in exactly the specified time.

They did not, as usual, begin by bringing in equipment and material to the installation site. Instead, large capacity trailers arrived with prepared units at the building where the boiler system was to be installed. A powerful crane truck, capable of lifting 25 tons of freight in one swing, also arrived at the site in time. The installers were equipped with hoists and jacks, which they used to maneuver carefully all the units into the building, following guides built into the foundation. All that remained to be done was to join up all the conduits, establish the control and measuring equipment... "Where's the person who ordered this? Take the key!"

True, this is only the consummation of enormous work--unseen at the installation site--by the combine's collective.

Every unit of the boiler had been assembled and tested in the shops before hand. The insulation workers had wrapped it in thermal insulation; the installers had put the steel "shirt" on the top. Other units were prepared in the same parallel fashion: the station for chemical water treatment, the pump systems unit, the unit for the control and measuring devices and the automated equipment.

This unique conveyor is the basic operating principle of the combine: the parts, units and systems come together like little streams flowing into a river. By by no means should one think that all efforts are concentrated just on the preparation of units for one boiler system at a time. The "hulls" of several different kinds of "ships" are being put together in the "building slips" at one time.

The combine is called experimental for good reason. There is, after all, nothing similar in our country, and there was nowhere to send its specialists for study. As the director himself claims; "We were operating by trial and error."

And in reality, this combine now reminds one of a well-oiled and adjusted mechanism. But how much intelligence, diligence, inventiveness and courage were necessary to finally put the production of boiler units onto a production line? The least bulky arrangement of the units had to be devised in order to make it possible for them to be transported on trailers and unloaded by a crane truck. And all the units had to go together easily and quickly.

Nothing new is done easily. There are many reasons and factors for this. Sometimes this and the fear of new things or a persistent habit of doing things the old way, which is, people say, more reliable and more accurate. What kind of person, then, had the necessary enthusiasm to be director of the management, to be part of the party organs, to be a member of the directorate of the combine and overcome administrative obstacles, departmental barriers, and technical problems. For the sake of this goal--a plant which produces boilers--it was worth sweating over. This is, after all, real scientific and technical progress, the real embodiment of the tasks set by the 26th party congress.

Today the combine is taking only the first steps. Its production program is about 20 boilers a year. But its structure is already clearly outlined. An experimental plant for installation parts is employed in assembling units. Two specialized construction and installation administrations are installing units for customers. There is also a specialized start-up and adjustment installation administration which is responsible for setting up monitoring and measuring devices and for putting the boiler into operation. The combine has taken upon itself to construct the buildings for the boiler systems. This has been entrusted to a mobile mechanized unit.

After the renovation of the plant is completed, the combine must reach out for another cherished goal of 60 boilers per year, which will be handed over to the customer complete with key.

The task is large and complex. The realization of this kind of program requires a great deal of strength. And it is for this reason that the combine is now concerned with the main problem, how to standardize the boilers. Every customer has essentially his own individual plant. Is this possible with a production line method? Of course, not. The combine has worked out standard technical specifications. Proceeding from these figures, the customer can choose without any harm to his project a plan for a fully-assembled boiler with a production of 3 to 60 kilocalories per hour.

Testing of the units is another important task which is on the agenda. It is well known that it is much easier to eliminate any defect here at the plant than at the installation site. But for now only individual units can be tested. It will be possible to give the assembled boiler a test run in the new shop with the name MIK /Installation and Testing Unit/.

But, what do the economists say about the new method?

"Unit installation not only significantly reduces the time required for building thermal facilities," says V. Semanyev, "but it also significantly reduces expenses. Judge for yourselves. Previously the estimated cost of construction and installation work amounted to more than 52,000 rubles; it is about 36,000 for us to produce the same type of boiler. The labor costs are lower, metal and other materials are saved. In general, the cost of a boiler has been reduced from 86,000 to 66,000 rubles."

The experimental boiler-construction combine can be considered not only an experimental testing site for the unit method, but also a unique school of advanced experience. There is no doubt that worthy students will be found to spread this experience throughout the country.

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